THE REGULATION OF PUBLIC UTILITIES

With Special Reference to Gas Companies in Minnesota

A THESIS

Submitted to the Faculty of the Graduate School of
the University of Minnesota

by

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REPORT

of

COMMITTEE ON THESIS

THE undersigned, acting as a committee of the Graduate School, have read the accompanying thesis submitted by O. W. Pfeiffer for the degree of Master of Arts. They approve it as a thesis meeting the requirements of the Graduate School of the University of Minnesota, and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts.

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PREFACE.

This thesis is concerned primarily with only one of the public utilities, namely gas companies. It is the hope of the writer to carry the work forward sometime in the future and to consider the development and regulation of electric, street railway and telephone companies as well. In as much as there has been no previous systematic inquiry into the conditions of public utilities in Minnesota, it was thought that such a study as is here attempted might be of some practical value to the state, especially since the problem of regulation has recently assumed such prominence.

On account of the complete absence of any adequate system of public supervision of public utilities in Minnesota, knowledge of the real "inside"

facts is hard to ascertain. In some cases such information will not be made public until it is compelled by law. Gas companies have been selected for this paper for several reasons. In the first place, the gas industry is the oldest of the municipal public utilities, still remaining largely in private hands. Moreover, statistical and other information has been more accessible concerning gas companies than concerning the other utlities.

Finally, regulation has been carried on more effectively in this industry than in any other public utility, and the results of governmental supervision are thus the more reliable for study and analysis.

One of the principal sources of information has been a compilation of public utility rates in Minnesota prepared by the Municipal Reference Bureau of the Extension Division of the University of Minnesota. The questionnaire on which this compilation has been based covered:

1. Method of production
2. Quantity of production

3. Extent of services supplied, i.e. number of consumers, yearly amount sold, miles of main, etc.
4. Extent and cost of public service,
5. Prices charged to private consumers.

This compilation has not yet been published, (May 1914,) but inasmuch as the writer of this article assisted Mr. G. A. Gesell in drawing up the questionnaire and compiling the returns, the information thus secured has been drawn upon for this paper. I must also acknowledge the courtesy of managers and directors of many corporations, as well as numerous other men interested in this field, who have been most generous in replying to inquiries. The various telephone companies, especially the Northwestern Telephone Exchange Co., have been very ready to give any information desired. Brown's Directories of Gas Companies for the past twenty years, which were kindly loaned by the Minneapolis Gas Light Co., have been used for statistical information except when other sources appeared to be more reliable. The writer is especialindebted to Professor John H. Gray, whose excellent

library on public utilities has been invaluable, and whose assistance and suggestions are responsible for many of the ideas herein expressed.

CHAPTER I

RELATION OF PUBLIC UTILITIES TO THE PUBLIC.

A. Public Utilities: Their Importance in Municipal Life.

Modern municipalities are faced with ever increasing problems, which continually arise as the population more and more concentrates in large cities. One of the striking features of American life is this rapid pace at which our cities are growing larger. In Minnesota there is still a large rural population, but it is increasing very slowly while the larger cities like Minneapolis, St. Paul, and Duluth are growing by leaps and bounds.[a] It is perfectly clear that such congestion of population will give rise to new social and economic conditions not dreamed of in a day of small and scattered population. One of the outgrowths of this changed condition in American life is the

a. Rural population in Minnesota increased 7.7% in 1900-1910 while urban population increased 38.6%. For full statement of this tendency see abstract of Thirteenth Census of the United States, P54 and ff.

development of "public utilities," or public service corporations,- street transportation, lighting, power and telephone communication. This paper will be concerned with these forms of public or semi-public activities.

These public utilities have become great necessities of life in every municipality. They are so intimately bound up with the life of every city that they are absolutely indispensable.

Their importance has been well stated by the Supreme Court of Wisconsin[a]

"The progress of science and invention, combined with the tremenduous growth of congested urban areas, has made the great mass of the people absolutely dependent upon the great public utilities of the time. Modern business and modern life could not go on without them. The urban citizen of today goes to his business upon the street railway, and transacts it with the aid of the telegraph, the telephone, the express company, and the commercial railway. The gas and electric

a. Milwaukee Electric Railway Co. vs Railroad commission. 142 N.W. 491, (494), 1913.

companies light his home, cook his meals, furnish him with power for domestic operations, and sometimes even furnish him with heat; while water companies provide him with water, and telephone companies afford him opportunity at any moment for conversation with friends either at home or in distant cities. We must catalogue our public utilities and try to imagine how we would get along without them if we would realize our dependence upon them."

The toll which our people pay for their services is enormous. Minneapolis and St. Paul together spend nearly nine million dollars a year for electric transportation.[a] The people of the state pay to telephone companies about $7,000,000 annually[b] or something more than $3.00 for every inhabitant in the state. Minneapolis' electric bill for 1912 was nearly $2,000,000.[c] Its gas bill was even greater.[d] Thruout the state the people are paying many millions for electricity, gas, water, street railway, and telephone services. Even in the rural communities the public

a. Annual Report of the Twin City Rapid Transit Co. for year of 1913 - $8,870,336.09.
b. Biennial Report of the Public Examiner (1912) pp 41-48
c. Annual Report of Minneapolis General Electric Co.
d. Slightly above $2,000,000. See chapter on Financial Developments of gas companies, pp

utilities are coming to play an important role. In 1907 there were 50,000 telephones installed outside of the cities in Minnesota, as compared with 8,000 in 1902[a] In 1902 the rural phones ~~were~~ comprised but 8% of the total number; in 1907, 30%.[b] Electric companies are supplying light and power to many small villages and to numerous farmers. Electric street railroads are branching out beyond the city limits and becoming interurban as well as urban. In short, the development of public utilities is becoming an increasingly important factor in the life of all the people of Minnesota, as well as in the United States at large.[c]

a. Special Report of the United States Census on Telephones, 1907, p 42. The Report for 1912 has not yet been published.
b. Ibid.
c. This may be regarded as but a further step in modern specialization. People are coming more and more to do things by special agencies. Cloth and clothes making has disappeared from the home almost entirely, except in the sweated industries. Laundering and a large part of the cooking is now done outside the home. And so supplying water, lighting the home, furnishing fuel for the kitchen stove, etc, are carried on by special agencies.

B. Economic Basis of Government Regulation

1. Failure of Competition to Regulate

We have called these public service corporations, or public utilities, accepting for our purpose the common terminology. Likewise the same businesses are frequently named quasi - public corporations. In every one of their names we find the word public, seeming to imply a peculiar, or unusual characteristic as distinct from ordinary private corporations. We may ask,- why call them public? The first answer which comes to our mind is that they are public service corporations, because they are regulated by the public. Such an answer, however, is no answer; it is merely stating the problem in reverse order. We then ask, why do we regulate them? There are reasons, in the departments of both law and economics, which not merely justify, but even necessitate regulation. These are the explanations of the term public utilities.

From the stand point of economics, it has been demonstrated that competition, the natural regulating factor in business life, cannot operate in the field of public utilities. These industries are subject so completely to the law of increasing returns, that monopoly is the inevitable situation. It is obvious that the larger a gas company, street railway, or electric company, the more cheaply it may sell its commodities. This is so apparent as to need little explanation.[a] Experience in practically all of our large American cities has shown that competition between gas companies, electric or transportation companies has resulted in wasteful duplication of structural equipment, council bribing and other political corruption;, reckless and careless granting of franchises, and finally consolidation.[b]

a. See H. R. Seager: Principles of Economics pp 411-414, and R. T. Ely's: Monopolies and Trusts, pp 59 and ff for clear statements on this point. Professor Ely's assumption that the telephone industry was also subject to the law of increasing returns has been superseded. Professor Seager clearly shows that the telephone is subject to the law of decreasing returns.

b. See E. W. Bemis: Municipal Monopolies
R. T. Ely: Problems of Today
John H. Gray: The Gas Supply of Barton, in the Quarterly Journal of Economics Vol. XIV pp 87 - 120.
Geo. W. Anderson: Telephone Competition in the Middle West and It's Lesson for New England.
The Annals of the American Academy Vol. XXXI No.3, (May 1908) is devoted to the question of the Control of Municipal Public Service Corporations, and throws much light on the failure of Competition to Regulate.
See also references given by E. H. Downey, in his "Urban Utilities in Iowa" p 234 and ff of Vol. I of the Iowa Applied History Series.

2. Local Experience in Competition

Minnesota has had but little serious experience with direct competition except in telephone service.[a] Numerous cities have granted competing franchises but only rarely did the competition materialize. Attempts have been made in years gone by in Minneapolis to start competitive lighting and transportation systems. Such efforts were frustrated principally, perhaps, through corrupt influences brought to bear by the existing companies.[b] Winona has tried the experiment in its electric lighting. As a result it can tell a story of competing companies, sharp rate reductions, receiverships and consolidations. One most interesting case of competition is that of the lighting business in La Crosse. This has been given much publicity through two decisions of the Wisconsin Railroad Commission, and it is of special interest to Minnesota because La Crosse is located just over the state line. The city's lighting business was begun by the La Crosse Gas Company which was chartered in 1856 and reorganized in 1863. In 1881

a. It may be observed here that the telephone industry is not subject to the law of increasing returns, but rather the reverse. It is no doubt this fact which has made it possible for competition to be so much more prevalent in this, than in other public service industries.

b. See Bemis, (supra) pp 631 - 2, 659 - 660.

a Brush Electric Company was organized, utilizing the arc light patented by Mr. Brush. Six years later an Edison Company was organized to sell commercial lighting using Mr. Edison's incandescent lamp. The two electric companies ran with practically no competition on account of the different form of service each furnished, and in 1901 they were merged with the gas corporation into the La Crosse Gas and Electric Company. This merger aroused much local hostility and so a new electric undertaking was created - the Central Electric Company. After a year of warfare the new company was forced to capitulate and leased its plant and property for the remainder of its franchise to its older competitor. Dissatisfaction was still rife among many people who consequently formed the Wisconsin Light and Power Company, with the result that in twenty months it too gave up the struggle and sold out to the consolidated firm for what it actually cost.[a] Thus, the La Crosse Gas and Electric Company, which is now buying its current from a hydro-electric company has on its hands much useless

a. W. R. C. R. 3, 6 - 9 quoted in 8 W. R. C. R. 148 - 152. In re Application La Crosse Gas and Electric Company.

property upon which investment it must pay interest, however. The people of La Crosse, through their short-sighted energy to secure low rates for a few months have forced upon themselves a system which compels unnecessarily high rates.

3. Benefits Which Have Arisen from Competition.

a. Direct Competition

Some benefits, it is true, have resulted occasionally from competition. Through the rate reductions above mentioned in Winona and La Crosse many new consumers of electricity were created. In every case where telephone companies have competed, the number of people using the telephone has tended to increase. Competition has been a decidedly important factor in the telephone industry of Minnesota, but it is not our purpose to consider it in detail at this point. In general it will suffice to say that there have been three important advantages resulting:

1. Rates, both local and long distance, have been reduced in many cases.[a]
2. Service has been bettered in many localities.[b]
3. The uses of the telephone have greatly increased.[c]

The importance of the latter two results is not so great as a superficial examination would lead one to conclude. In regard to the number of subscribers, nowhere has the use of the telephone developed more rapidly in recent years than in the rural districts under the cooperative plan, where competition has not been a factor.[d] Moreover the Bell companies have been awake for the past ten years to the possibilities and requirements of the telephone industry in a way that was not true before. G. W. Anderson well stated the case in 1906 when he said concerning an investigation in the Middle West, "The public interest (has) received, in telephone management and development, scant consideration until within the last few years. But it is only fair to add that no one -- public or manager -- had any adequate conception of the extent of which the telephone could and would be used - of its real utility."[e]

a. The independent companies in Minnesota claim that competition has been exceedingly effective in reducing rates. See, Essentials of a Public Utility Law, a pamphlet published in 1913 by the Minnesota Independent Association.
b. Ibid. I have some interesting correspondence on this point.
c. Compare G.W. Anderson, Telephone Competition in the Middle West, (1906). Especially pp 12 - 13.
d. See above page 8.
e. Telephone Competition in Middle West, (supra) p 13 - 14.

It is safe to conclude that in recent years, telephone companies and the Bell interests, especially, know the potentialities of their business.

On the other hand the disadvantages of competition in this industry are quite apparent. The value of a telephone depends upon the number of people available with whom any one subscriber may desire to communicate. It is inter-communication among people. In Minneapolis if all the people a person ever would desire to call, use one particular line - his purposes will be served adequately by that company. As a matter of fact, however, most people find that if they do not have two lines, they are seriously handicapped. If the users of a telephone in a city are equally divided between two companies, the value of the service is worth only half what it would be, were they all connected. As Professor Taussig well says, "Competing telephones each having its set of subscribers, are the height of absurdity."[a] If, as in practice, there is duplication, to the extent that duplication, there is involved an economic waste.

a. Principles of Economics Vol. II p. 401

b. Potential Competition

Some benefits have resulted in Minnesota from the possibilities of competition. In many cities the people are no doubt enjoying low rates which the companies have voluntarily put into operation to prevent competition. This is most particularly true of smaller cities where electricity is now supplied by local steam plants, but which are in the vicinity of larger hydroelectric companies eager to enlarge their territory. One illustration will suffice to make the point clear. The Cambridge Milling Company, which supplies electricity in Cambridge, recently changed from a flat rate system of charges to the meter system. Owing to the fact that the company's accounts made no separation between the electric business and the flour milling business, it was impossible even to approximate the cost of supplying energy. The schedule of rates finally adopted was the one offered by the Eastern

Minnesota Power Company of Pine City, a company which desired to extend its transmission line to Cambridge. The mayor of Cambridge told the writer that the local firm did not dare to charge any more, for if it did the city would grant a franchise to the outside corporation, and drive the local plant out of the field. Potential competition here is undoubtedly the deciding factor in the electric rates. Next to municipal ownership nothing will force a small company to keep its rates down like a serious threat of bringing in a competing company. The difficulty arises whenever a city feels compelled to carry that threat into action.

This influence does not have nearly the power over a large, well organized company that it has over a small relatively inefficient plant. The reason is perfectly obvious. The larger corporations no doubt have their surplus funds upon which they can draw, they have their business established, and if they have not been unjudicious, their customers are in general pretty well satisfied with their services. On the other hand

the new comer has no business, the first few years of operation are the ones most naturally liable to loss, and here they may be made worse by rate cutting; difficulties of starting may result in service inferior to that already supplied, and in general the risks of a new business are about doubled. Thus it has happened that the possibility of competition has never caused the Bell lines in Minnesota to make reductions. They merely sit back and wait for the independent company to start up, and then, but not before, meet the competition. Outside of the three large cities of the state the independents have had hard sledding. The Bell lines steadily fight competition, but they do not fear it as does a small company, depending for its patronage solely upon one cummunity, and conducting its business in a more or less haphazard, inefficient manner.

c. Competition Between Gas and Electricity

Still another form of competition remains for our consideration, namely, competition between gas and electricity. When electricity entered the field, it

threw a great scare into the gas producers, who felt their industry was threatened with ruin. There is no question but what electricity is making inroads on gas as an illuminant. It is occasioned not so much by the low prices at which electricity may now be purchased, as by its natural advantages, such as its non-use of oxygen and its convenience in handling.[a] As electricity has made inroads on gas for lighting, this has benefited rather than harmed the gas industry. It has led to a wider use of gas, to the gas range, and the gas engine. Consumption of gas for cooking and manufacturing purposes has grown immensely[b] There has also been a strong movement to consolidate gas and electric companies. These two facts seem to show that such competition, while in some cases it may be very real is too indirect to act as a powerful or important regulating element.

If the decreasing supply of coal[c] should in the next fifty or one hundred years materially increase the cost of manufacturing gas, electricity, generated by water power, would no doubt

a. Compare Knoop: Policies of Municipal Trading, pp 204-206 This whole topic is treated more fully in the development of the gas industry. Ch.2.
b. Twelfth Census of U. S. Vol.X Part IV p 714.
c. Cambell & Parker estimate our present supply will last but 150 years.

replace it. Or if some new scientific discovery will largely reduce the cost of utilizing electric energy for heat the same results would follow. Hydroelectricity will of course become increasingly important as the supply of coal diminishes. But this, we believe does not materially alter our conclusion that, at present competition between gas and electricity is not an important regulating factor.

4. Conclusions Concerning Competition.

What shall be our final conclusions then, of competition in the field of public utilities? Its important disadvantages appear to be ineradicable. The folly of rate wars seems to persist until some pool of combination eliminates the competition. Duplicate equipment is an essential corollary of competition It is clearly an economic waste, and in the long run results in costs higher than they normally should be. The only way to avoid it is to avoid competition.. In street railway transportation, monopoly is almost the only possible situation. The only one of the utilities in which it is

seriously believed that good results, is the telephone. The benefits which apparently have arisen from telephone competition it ~~seems to me~~ appears could be secured through some form of more effective governmental supervision or perhaps ownership, without entailing the absurdities of of competition. In short we must conclude, that in the field of the public service corporations of our municipalities, it is idle to think of competition as a regulative force. As Professor John H. Gray has said, "It is the very fact that competition cannot control them, that makes them public service corporations, subject to state control."

C. DEVELOPMENT OF THE LEGAL DOCTRINE OF REGULATION.

1. Munn vs. Illinois.

The legal doctrine that the state might regulate public utilities because of their monopolistic character became an important part of American law in 1876. In the case of Munn vs. Illinois [a] Justice Waite explained the relation between a public service corporation and the public with a clearness and cogency that has not yet been improved upon. The case arose over a statute of Illinois establishing maximum charges to be made by warehouses for the storage of grain, and it involved the question of whether or not the charges made by grain warehouses were subject to public regulation. Justice Waite went directly to fundamental principles relating to regulation, and stated the real reasons why we attempt to regulate any of the so-called public utilities.

a 94 U. S. 113.

" This brings us to inquire as to the principles upon which this power of regulation rests " the opinion read, in order that we may determine what is within and what without its operative effect. Looking then, to the common law, from whence came the right which the constitution protects, we find that when private property is ' affected with a public interest , it ceases to be juris private only '. This was said by Lord Chief Justice Hale more than two hundred years ago in his treatise De Portibus Maris, and has been accepted without objection as an essential element in the law of property ever since. Property does become clothed with a public interest when used in a manner to make it of public consequence, and affect the community at large. When, therefore one devotes his property to a use in which the public has an interest, he, in effect, grants to the public an interest in that use, and must submit to be controlled by the public for the common good to the extent of the interest he has thus created.

" He may withdraw his grant by discontimuing the use; but so long as he maintains the use, he must submit to the control." In other words, when any business becomes " affected with a public interest " it is subject to governmental regulation.

What do we mean, however, by the expression " affected with a public interest "? Again Justice Waite gives us the answer. Quoting Lord Hale, he says, " Whenever the accident of time casts upon a party, the benefit of having a legal monopoly of landing goods in a public port ..... he is confined to taking reasonable compensation only for the use of the wharf. " And again, " It is enough that there exists a virtual monoply. " The other cases to which the decision refers all are instances of where individuals have had a monopoly over certain branches of human industry and as a consequence are to be subjected to governmental supervision.

2. Earliest Regulation in England

This principle which was not laid down as an important legal doctrine of our country until 1876 was well recognized, as Justice Waite pointed out, in the old English common law. Restrictions on freedom of business were common in medieval times in many callings which for centuries have not been essentially unregulated. The miller, the baker, the surgeon, the tailor, the village blacksmith were all required by to serve all comers alike and at reasonable prices[a]. The explanation in every case was that each man, in his village, had a virtual monopoly of his industry. No man could run a public wharf, a ferry, a toll bridge or turnpike without being subject to external restrictions. It was common when the English Kings still had the power, for them to grant privileges or patents of monopoly which gave the holders certain rights and imposed on themcertain obligations. When the kings lost this pow-

a. See Beale and Wyman - Cases on public service companies. Ch.I for decisions relating to the nature of business " affected with a public interest"- Beale and Wymans " Railroad Rate Regulation "- Ch. I- containing an historical introduction, has perhaps the best summary of the English Law. Wyman's: Public Service Corporations, Chs. I and II contains about the same material in a rather more expanded form. A. S. Hall's pamphlet, " The origin, growth and work of Public utilities Commissions also has an excellent statement.

er, Parliament issued franchises and charters. But in all cases the principles were the same. Whenever any person held a monopoly, in return he was restricted in the free performance of his activities.

3. Reaction against Regulation.

When the modern industrial era broke upon England late in the 18th Century it found that the system of governmental interference had gone too far. The then existing limitations were opposing the progress which later produced modern Industrial England. Adam Smith made clear that regulation by law instead of benefiting England was checking her commercial development. Ricardo later pointed out that governmental adjustments were unwise and unnecessary because competition would accomplish the proper adjustments and still leave man free to creat and accumulate wealth. This principle of laissez - faire in industry was accompanied by an awakening sense of the importance of the individual as a part of the political and social organization. [b] Nowhere was this idea

a. See also Munn vs. Ill. quoted above.
b. Compare doctrines of Declaration of Independence, and leaders of the French Revolution.

as strongly and as firmly embedded in the national philosophy of life as in America. This could not well have been otherwise when we consider the opportunities for individualistic development in our country. The pioneer who went forward into unknown wilds and fought out for himself an independent living was the dominant type of American citizen till a few decades ago. His spirit permeated the national citizenship. His fundamental instincts were opposed to any form of governmental interference with the individual. This is the explanation of our drawing so far away from the ideas of governmental supervision, this and the fact that in most industries competition was for many years serving to regulate these same industries in a more or less satisfactory manner.

It seems natural to people today to regard public utilities as subject to special state supervision. Yet less than forty years before the beginning of the 20th century , American courts were still

ruling that gas companies were bound by no restrictions different from ordinary private corporations. This individualistic idea of freedom from government restraint had captured everyone. The few quotations following illustrate the point; - In 1862 the Supreme Court of Errors of Connecticut said, " The allegation that the defendants (a gas corporation) cut off the supply of gas maliciously and wantonly, and with intent to injure the plaintiff (a resident of Norwich), is of no importance in the determination of this question. Where a party has a legal right to do a particular act at pleasure, the motive which induced the act at the time in question can never affect his legal liability for the act," [a]

In other words the gas company had no public responsibilities whatsoever. Four years before (1858) the highest court of New Jersey made a similar ruling, holding that gas companies were not obliged to supply gas to all people living along its mains,

a. McCune vs. Norwich Gas Co. 30 Conn. 521

Said the court: " The language of the charter is throughout permissive, and not compulsory. The company may make and sell gas or not, at their pleasure, and I see no more reason to hold that the duty of doing is meant to be imperative, than to hold that other companies incorporated to carry on manufactures, or to do any other business, are bound to serve the public any further than they find it to be their interest to do so. It was earnestly insisted, on the argument , that the community have a great interest in the use of gas, and that companies set up to furnish it ought to be treated like innkeepers and common carriers, and that, if no precedent can be found for such a decision the court ought to make one. But that there is no authority for so holding in England or America, where companies have been so long incorporated for supplying water and gas to the inhabitants of numerous towns and cities, affords a strong presumption that there is no principle of law

upon which it can be supported.[a]" Other opinions of a similar nature[b] were rendered in many states holding that gas and electric companies were private companies essentially and not subject to governmental regulation.

4. Present View of Regulation.

This point of wiew was one which had been dying hard. It is doubtful if it is entirely dead yet. Wyman cites numerous cases, where the courts were faced with the theory that many businesses, now called public service corporations regarded themselves as private concerns, who should be allowed to regulate their own business.[c] The railroads for years fought every attempt to establish effective state regulation.[d] Every business hates to see any interference with its status quo especially when

a. Paterson Gas Light Co. vs. Brady. 3 Dutcher N. J. 245 (1858)
b. See especially Commonwealth vs. Lowell Gas Light Co. 12 Allen (Mass.) 75 (1866)
c. Wyman, Public Service Corporations. Vol. I Ch. III and IV.
d. "In 1886 when the Interstate Commerce Act was first broached we, [the railroads], ran up and down the line and howled calamity and said the state had no right to intermeddle in our private affairs, that the railroad business did not need regulation and that the proposed statute would throw us into bank ruptcy." Address by Allan B. Matthew, attorney for the Western Pacific, before the American Association of Demurrage, in Traffic World, August 24, 1912 p. 321.

that interference is a restriction. Witness Wall Street's resentment against attempted legislation, the bankers' recent outcry that they knew best how to regulate their own business. Our tendency to depart from laissez-faire principles of government is provoking endless protest. It is entirely possible that in our zeal to democratize government and industry we are going too rapidly. Certainly there are sincere economists who believe this to be the case. But when we turn to such industries as those with which this paper is concerned: transportation, communication, water supply, lighting and power, the conclusion seems irresistible that these businesses are "affected with a public interest", that they are something in which the public is actually concerned in a peculiar way which makes governmental regulation indispensable. Time and again the courts have pronounced all industries mentioned as businesses affected with a public interest subject to government regulation.

D. Public Utility Regulation as an Aspect of the Police Power

. Police Control over Streets, Etc, in the Interests of Safety.

"The power to fix rates and tolls to be charged by public utilities is one of the attributes of sovereignty."[a] This a recent reaffirmation by the Supreme Court of Wisconsin, of the existing law relating to public services reformed by private individuals. The power to fix rates, and incidental to it, the right to control the quality of service of companies engaged in supplying water, gas, electricity, transportation and communication, is a part of the state's sovereignity, and is generally called a special form of the police power.[b] However true this statement may be, it is equally true, as we have seen,[c] that this doctrine of regulating rates, when applied to these industries in question , is a new one. Until quite recently, and in many places, even now, the key of the whole matter has not been the inherent rights

a. Milwaukee Electric Railway & Light Co. vs Railroad Commission, 142 N.W. 491 (Wis.) 1913.
b. Wyman: Public Service Corporations, Vol. II Section 1401 and case cited.
   Freund: The Police Power, Ch.18 - especially Section 377.
c. pp & ff.

of sovereignty, but an entirely different aspect of the police power, namely, the control over streets in the interests of public safety. The necessity that the public utility corporations secure permission to use the streets has made them easily amenable to government authorities, and by people even today is regarded as the only basis of rate regulation.

Certain phases of government supervision consist of the exercise of the police power in its more restricted sense. Regulations relating to excavations, the laying of mains, conduits, pipes and subways are all in the interests of public safety. In the same class is the supervision of electric and telephone poles and wires. The necessity of guarding against the dangers of live wires either becoming entangled with telephone wires, or coming in contact with buildings or other property, or breaking and falling, comes within the protection of public safety. Restricting excessive numbers of poles and wires, or prohibiting them in certain parts of the city, as is commonly done, is partially for safety and partially in

the interests civic beauty. Regulating the speed of street cars, the laying of rails, the number of passengers per car, the heating and ventilation and cleanliness of cars, the places for stopping, crossings and the like, are all in the interests of public health or safety. Eliminating dangerous impurities from water and gas are also a part of the general police regulations.

All such provisions are clearly a part of the police power. They comprise a large part of the regulation of public utilities. This exercise is a sovereign power residing in the state and generally delegated to the municipalities.[a] They are powers which have been exercised from the very beginning of the public utilities. Upon such regulations have rested the more extensive powers of rate and service control, that is to say, the municipalities have used the power of granting street franchises, as a lever to demand control over matters beyond the primary police regulations of health and safety.

a. See 2 Dillon, Mun. Corp. Ch. on streets, sections relating to "public utilities". In many states there has been a tendency of late by the state to take back some of its control over streets, etc. See Commission Regulation of Public Utilities.

Regulation of rates, however, or control over services, where such control does not involve health or safety,[a] as a part of the general police control, is a very different proposition. As the Supreme Court of Wisconsin said in 1901,[b] "The power to regulate charges was not included in or incidental to the power to regulate the manner of using streets. There is not the remotest relation between them." The Supreme Court of Missouri has made a very similar decision. "That the company (the Bell Telephone Company of Missouri) is subject to reasonable regulations prescribed by the city, as to planting its poles and stringing its wires and the like, is obvious. Conceding all this, we are at a loss to see what this power to regulate the use of the streets has to do with the power to fix telephone charges. The power to regulate telephone charges is neither included in or incidental to the power to regulate the use of the streets, and the ordinance cannot be upheld on such ground..... To say that under this general power (of the general

a. Such as candle power requirement for gas.
b. State ex.rel. Wisconsin Tel. Co. vs. Sheboygan 111 Wis. 23

welfare clause) the city may fix rates for telephone service would be going entirely too far." [a]

2. Creation of Lighting Companies as an exercise of the Police Power.

There is good authority for taking the position that the creation of gas companies is in the interest of public health, safety, and convenience, and is thus an exercise of the police power. In 1877 Justice Field said in reference to a gas lighting company, "A private corporation ... may be employed by a city in the construction of works needed for the health, comfort, and convenience of it's citizens."[b] This idea was elaborated more fully in connection with two important cases which the Supreme Court of the United States had for it's consideration in 1885.[c] Justice Harlan delivered both decisions, and one of them, particularly the New Orleans Gas Co. vs. the Louisiana Light Co., is still regarded as a leading case on the point that a gas corporation is a business of a public nature. In this case Justice Harlan clearly states that the supply of gas relates to public health, safety and convenience, and is an object to which the police power extends. The gas supply "also holds", reads the decision,

a. St Louis vs Bell Telephone Co.96 Mo. 623 (1888). See also State ex rel Garner vs.Mo. & Kans. Telephone Co. 189 Mo. 83 (1905).
b. New Orleans vs. Clark 94 U. S. 644 (652) 1877.
c. New Orleans Gas Co. vs. Louisiana Light Co. 115 U.S. 650.Louisville Gas Co. vs Citizens' Gas Co.115 U.S.683.

"important relations to the public through the facilities furnished, by lighting the streets with gas, for the detection and prevention of crime. An English historian, contrasting London of today with the London of the times when its streets, supplied only with oil lamps, were the scenes of nightly robberies, says that 'the adventurers in gas lights did more for the prevention of crime than the government had done since the days of Alfred'. Knight Vol. 7 ch. 21. Macauley ch. 3."

The decision goes on to quote the decision of Justice Field, just referred to, and then it quotes with approval a decision rendered by the Supreme Court of Louisiana in 1875 as follows: "The right to operate gas works, and to illuminate a city, is not an ancient or usual occupation of citizens generally. No one has the right to dig up streets, and lay down gas pipes, erect lamp posts, and carry on the business of lighting the streets and the houses of the city of New Orleans, without special authority from the sovereign. It is a franchise belonging to the state, and in the exercise of the police power the state could carry on the bus-

iness itself, or select one or several agents to do so." [a]

Decisions of a similar character have been handed down in Missouri [b] and Illinois.[c] In this latter case the Supreme Court says, "When the right to make and sell gas to the city and its inhabitants.....is conferred upon a company, it is conferred as well for the benifit of the public as for the company." [d]

If a gas company is regarded as a means of detecting and preventing crime, an electric company may clearly be regarded as the same, and any public utility may be interpreted as being created in the interests of the general convenience and welfare. But again, creating a public utility in the interest of public safety and convenience as a legitimate object of the police power, differs from regulating the charges made by those utilities, as a phase of the police power, and the latter cannot be made to depend upon the former.

a. Crescent City Gas Light Co. vs. New Orleans Gas Light Co. 27 La. Ann. 138,147.

b. City of St. Louis vs. St. Louis Gas co. 70 Mo. 69 (1879) "The right to make and vend gas to the city and its inhabitants was a right conferred upon the company, for the benifit both of the company and the public....."

c. Chicago Gas Light Co. vs. Peoples Gas Light Co. 121 Ill. 530 (1887) Quoting the two Supreme Court decisions in 115 U. S. Reports and the Missouri Case in St. Louis.

d. Ibid -- at p. (539)

As the Indiana Supreme Court has said, "To secure the safe supply and use of natural gas is one thing and to fix the price at which gas shall be supplied is another and quite different thing." [a]

3. Public Policy Involved in Rate Regulation.

Brooks Adams in his excellent little book entitled "Railroads as Public Agents" shows that the regulation of freight charges is a very necessary attribute of sovereignty, which must be exercised for the good of the general public. [b] His argument, in brief, is somewhat as follows. Railway lines, he points out, are public highways, built primarily for the benefit of the state. The government might well have built the roads itself, had it seen fit, and in fact bypublic grants of land and numerous bond issues it has materially aided railway construction. Railroads, in their fundamental aspects, differ but very little from any other public highway. The charges collected to maintain the railways are essentially similar to taxes assessed to support ordinary team roads. Thus the collection of such toll becomes a form of "delegated tax-

a. Lewisville Natural Gas Co. vs. State ex rel. 135 Ind. 49 (1893)

b. See particularly pp. 31--66. "The regulation of highways falls under the head of the Police Power....and... can never be alienated, deminished or used to the public detriment." p 31.

ation," and is really an exercise of the sovereignty, which the state has for the time committed to the railroad owners. It follows then that the regulation of these tolls is also a sovereign power which must be retained and exercised by the state in the interests of justice and the public welfare. If the government did not step in to regulate and restrict the private individuals having control of the great railway systems, they could exercise their tremendous power, akin to the sovereign right of taxation, to collect or extort from the people, great private fortunes, just as the Roman provincial governors did before the days of Ceasar.

The argument of Mr. Adams can easily be extended to include all public utilities. The services which they render to the public are now all regarded as legitimate objects of government activity. There has been an extensive devolopment of government ownership and management of gas, electric, tramway, water and telephone undertakings. Every industry of this nature might conceivably be conducted by the state if it so desired. But in many cases it has created special agents [a] known as public service corporations, invested with the power of

a For an exposition of the agency idea as applied to public utilities in addition to railroads, see John H. Gray's paper on the Vagaries of Valuation, in the Proceedings of the American Economic Assn. 1913 pp. 24-26

supplying the services in question. The toll which these agents demand of the public, like railway rates, is clearly analagous to taxation for direct governmental activities. Street transportation is as essential to the citizens of a large city as street paving; lighting of the home as important as lighting of the streets; supplying water as sprinkling the streets; furnishing telephone communication, as furnishing postal communication. In one case we provide funds directly by government taxation, in the other we more frequently permit private corporations to collect the revenue needed by "delegated taxation." Is not the analogy between the two close? Is not rate charging in public utilities very similar to taxation for other public purposes? If it is such, and it would appear to be so, the conclusion inevitably follows that the fixing of rates is an attribute of sovereignty which the state cannot relinquish and still be a state.

4. Fundamental Basis of the Police Power in Rate Regulation.

Professor Freund in his work on the Police Power,

arrives at this same opinion by a slightly different line of reasoning. In his chapter devoted to businesses affected with a public interest he proceeds to show how they come within the scope of the police power. All the earlier cases he cites, especially Munn vs. Illinois, which is quoted at some length, are cases where the courts relied principally upon the existence of a virtual monopoly. Professor Freund then goes on to point out that the existence of this monopoly calls for the exercise of the police power.

"The police power is exercised for the prevention of monopolies, where they rest upon preventable machinations; it follows then that where a monopoly is inevitable by reason of natural conditions, the power must exist to minimize its detrimental effects." [a]

This is a logical conclusion. The great maxim of the police power is the monition, "So use your own as not to injure others." Experience has proved, however, that where monopoly exists unregulated, oppression is the inevitable result. Profit, rather than public service is the goal the free monopolist endeavors to reach. Such a con-

a. The Police Power. Section 377.

dition of affairs is clearly inimical to the welfare of society. So the police power may step in and restrict public utility charges, to the point which gives only reasonable compensation for services rendered. This would seem essentially the same point which Mr. Brooks Adams has made. It has led us, moreover, back to our starting point, namely, the proposition that public utilities are regulated because they are natural and inevitable monopolies. The existence of monopolistic conditions is thus recognized as the fundamental basis for government supervision. With this view well in mind, let us then, look into the development and regulation of the gas industry in Minnesota.

CHAPTER II

HISTORY AND PRESENT DEVELOPMENT OF THE GAS INDUSTRY IN MINNESOTA.

A. History.

1. Beginnings of the Industry.

Of all the modern public utilities, gas was the first to make its appearance. According to Professor John H. Gray it was used first in England to light London bridge in celebration of Wellington's victory at Waterloo. All over the world it began to be used commercially early in the 19th century, several decades ahead of electricity. By 1850 thirty companies were operating in the U. S. with a total capitalization of $6,674,000.[a] The telephone industry, on the other hand, did not attain commercial importance till 1877,[b] and the electric lighting and power industry waited another decade. In eastern cities especially, by the time electricity had appeared, gas lighting was well

a. Twelfth census of U. S. Vol. 10, part 4, page 705.

b. Special U. S. census on telephones (1907), page 14.

established. During its century of existance, by far the most rapid developments have occurred in the last quarter and none of its several revolutions are more interesting than the changes occuring since and partially as the result of competition from electricity.

The general trend of development has been essentially the same in Minnesota as elsewhere. The first city in this state to boast a gas plant was St. Paul. In 1856 the territorial legislature of Minnesota incorporated the St. Paul Gas Light Co.,[a] and gave it the exclusive right to supply gas in the capital city. In 1870 three companies were incorporated, Minneapolis Gas Light Co., the Duluth Gas Light Co., and the Winona Gas Light Co.[b] In the same year Minneapolis and Winona granted franchises to the companies concerned, the former for 40[c] and the latter for 25[d] years.[e] In 1872 companies were incorporated and received franchises in Faribault[f] and Red Wing.[g] In '73 the Mankato Gas Light Co. was incorporated, but like the Duluth Gas Light Co., does not seem to have gone into operation for some time. In both of these

a. Charter and ordinances of St. Paul 1863 p. 83.
b. The articles of Incorporation were filed March 1, March 25, and August 3, 1870 respectively. Records of Secretary of State. Vol.B, pp.294, 309, 343.
c. Charter and ordinances of Mpls. 1883 p. 124.
d. Charter and ordinances of Winona 1897, p. 251.
e. I cannot find any franchise at this time for Duluth. The company did not appear to go into business at all.

cities new companies were incorporated in 1883. Both received their municipal franchises, and started operations[a] in the same year. The Stillwater Gas Light Co. was incorporated in 1874.

In 1887 ten gas companies were in existence in Minnesota.[b] During the next five years, (1887-1892) only one new project[c] was started, but in 1892 two[d] more were organized, and in 1893 thirteen companies were in existence. Some of these early ventures experienced serious financial difficulties, and it soon became apparent that not all of these cities could afford the luxury of a gas company. In Crookston the company never built its plant;[e] by 1899 the Fergus Falls Gas and Mill Co. had ceased operations;[f] and by 1900 the Little Falls

a. For the Mankato Incorporation see Records of the Sect. of State Vol. I p327. For its beginning operations in 1883 the authority is Browns Directory of American Gas Companies, 1887 pp 87-88. See also Ordinances of Mankato 1897 p 126. For Duluth see Ordinances of City of Duluth, (1895) p 390.
b. Duluth Gas and Water Co.,
Faribault Gas Light Co.,
Mankato Gas Light Co.,
Fergus Falls Gas and Mill Co.,
Minneapolis Gas Light Co.,
Red Wing Gas Light Co.,
St. Cloud Gas Light & Electric Co.,
St. Paul Gas Light Co.,
Stillwater Gas Light Co.,
Winona Gas Light Co.,
Brown's Directory of Gas Companies, 1887, pp 27-28.
c. Rochester Light and Fuel Co.,
Brownb Directory, 1892, p. 57.
d. The new ones were in Crookston and Little Falls.
Brownb Directory, 1893 pp. 58-59.
e. Brown's Directory, 1899, pp. 57-58.
f. Ibid.

TABLE I

Name and Population of all Cities or Villages in Minnesota having a Gas Plant in 1913.[a]

Privately Owned	(1910 census)
Minneapolis	301,408
St. Paul	214,744
Winona	18,583
St. Cloud	10,600
Mankato	10,365
Stillwater	10,198
Red Wing	9,048
Faribault	9,001
Rochester	7,844
Crookston	7,559
Austin	6,960
Albert Lea	6,192
Owatonna	5,658
Moorhead	4,840
South St. Paul	4,510
Northfield	3,265
West Minneapolis	3,022
Rothsay (a)	342
Young America (g)	303
Brandon (g)	276
	634,719
20 Cities & Villages	

Municipally Owned	(1910 census)
Duluth	78,466
Canby (g)	1,528
Madelia (g)	1,273
Renville	1,182
Mountain Lake (g)	1,081
Dodge Center (g)	957
Bird Island (a)	931
Hector (g)	866
Monticello (g)	858
Slayton	850
Lake Benton (g)	844
Cottonwood (g)	770
Houston (g)	700
Lamberton (g)	652
Hayfield (g)	586
West Concord (a)	584
Adams	576
Battle Lake (a)	567
Norwood (a)	522
Sanborn (g)	462
Truman (g)	451
Lester Prairie (g)	420
St. Michael (a)	401
Currie (g)	329
St. Bonifacius (a)	275
Dover (a)	233
	96,364
26 Cities & Villages	

Totals	20 Cities & Villages	634,719
	26 " " "	96,364
	46 " " "	731,075

a(x) Based on Returns made to Municipal Reference Bureau and Brown's Directories of Gas Companies for 1913.
(a) Indicates Acetylene plant, (g) gasoline.

concern was dead.[a] During the five years following 1899, there was a rapid growth of gasoline gas establishments, mostly municipally owned, in small towns throughout the state. According to the Thirteenth Census[b] the total number of towns and cities supplies with gas increased from 11 to 16 during this five year period. This appears, however, to cover only the companies manufacturing coal and oil gas.[c] In addition to these sixteen Brown's Directory for 1904 names 19 more, were either built or in course of construction.[d] Two of these were acetylene plants and the others gasoline.[e] The ten year period 1904-1914 was not marked by any great increase in the number of localities supplied by gas. About ten new gas establishments were begun, most of them small ones. In 1913 there were about 46 in the state of Minnesota.[f] Of these forty-six, eight manufacture acetylene; seventeen, gasoline, and twenty-one coal or oil gas.[g]

2. Present Extent of the Industry.

Just one third of all the cities in the state of 2500 population or more are now supplied with gas.[h] Out

a. Brown's Directory, 1900, pp. 66-67.
b. Vol. IX. p. 603.
c. Brown's Directory 1904, pp. 79-82 accounts for 16 of this kind.
d. Brown's Directory 1904 pp 212. 222-223. These were all in small towns, 17 municipally owned.
e. Ibid.
f. The Thirteenth Census gives 42 for 1909, Vol. IX p 603.
g. Brown's Directory, 1913, pp. 374, 394-6, 140-6. See Table I.
h. See Abstract of the Thirteenth Census, p. 70.

of ten cities with approximately 10,000 population or greater[a]; however, there is but one (Virginia) which does not have its gas supply. A little more than one third of the people of Minnesota live in towns or cities where gas is available.[b]

The rapid increases in the annual production of gas form perhaps the most striking feature in the history of this industry in Minnesota. In 1892 the entire state manufactured about 500,000,000 cubic feet.[c] In 1900 the yearly production was 753,000,000 cubic feet.[d] During the past year, 1913, the number has increased to more than 4,000,000,000.[e] This means an increase of 430% during the thirteen years. At its present rate of growth, Minneapolis alone bids fair in 1914 to use three times the state's total output of 1900.[f] The receipts from gas sales have not increased as rapidly as the volume of business done, owing to the reductions in rates[g]; yet the figures yearly grow much larger. In 1899 the value of gas products[h] was $1,076,000; in 1904, $2,033,000, and in 1909, $2,874,000,[i] an increase of 167%

a. This includes Faribault and Red Wing, which in 1910 were slightly under 10,000. See preceding reference.
b. See Table I.
c. This is only a rough estimate based on reports in Brownls Directory for that year.
d. Twelfth Census Vol. X, Part IV, p. 712.
e. See Table II.
f. The Minneapolis Gas Light Co. this past year sold about 2,150,000 M. cu. ft., more than half the entire states production. See Table III.
g. See infra. pp. 67
h. This includes Coke, tar annmoniacal liquors, etc. These amount to about 10-15% of the entire receipts.
i. Thirteenth Census Vol. IX, p. 603.

TABLE NO. 2. (x)

Number of cubic feet of gas sold in cities of Minnesota in 1913. (y)
Number of consumers, and quantity per consumer.

	No. of cubic feet sold	No. of consumers	Gas sold per (m) consumer
Minneapolis	2,149,436,016	68,150	31,539
St. Paul	1,236,740,600	35,964	34,388
Duluth	340,000,000	9,510	35,756
Winona	65,000,000	2,955	22,000
Red Wing	40,000,000	1,300	30,600
Mankato	38,822,800	1,870	20,760
Stillwater	28,361,000	1,202	23,600
Rochester	25,254,000	1,027	24,600
Faribault (1912)	22,000,000	1,100	20,000
Austin	17,000,000	900	18,888
St. Cloud	16,350,000	(o) 700	23,355
Albert Lea	(n) 12,000,000	900	13,333 z
Moorhead	11,649,000	481	24,220
Northfield	8,000,000	450	17,777
Owatonna	7,900,000	390	20,260
South St. Paul	5,530,000	207	26,717
West Minneapolis	5,000,000	200	25,000
Renville	2,197,300	138	16,000
Totals for 1913.	4,031,240,916	137,442	

(x) This table is compiled from the returns made to the Municipal Reference Bureau.
(y) The quantity used in the other cities is negligible.
(z) Not reliable.
(m) The figures in this column are lower than they ought to be for the reason that the number of consumers given is the number at the end of the year, not the average throughout the year. In Minneapolis, for instance, the average sales per annum were 33,306.
(n) Moody's manual of Corporations for 1913. This is fairly consistent with the returns made to the Municipal Reference Bureau, 5,986,280 cu. ft. sold in 5 months.
(o) Average between summer and winter consumers.

in 10 years. During this same period the population of the state has increased but 18.5%.[a] In other words the receipts of the gas companies increased nine times as fast as the population. The following table, compiled from the last census indicates the general growth of the industry:[b]

Table III

Statistics Showing Growth of Gas Industry in Minnesota.

	1899	1904	1909
Number of plants	11	16	42
Capital	$8,900,000	11,390,000	$13,821,000
Salaries	49,000	79,000	171,000
Wages	169,000	268,000	292,000
Cost of materials	304,000	624,000	820,000
Value of Products	1,076,000	2,033,000	2,874,000

a. Abstract of the Thirteenth Census, Minnesota Supplement, p. 568.
b. See Reference i on preceding page.

B. Analysis of Six Leading Gas Works.

1. Growth in Production of Gas.

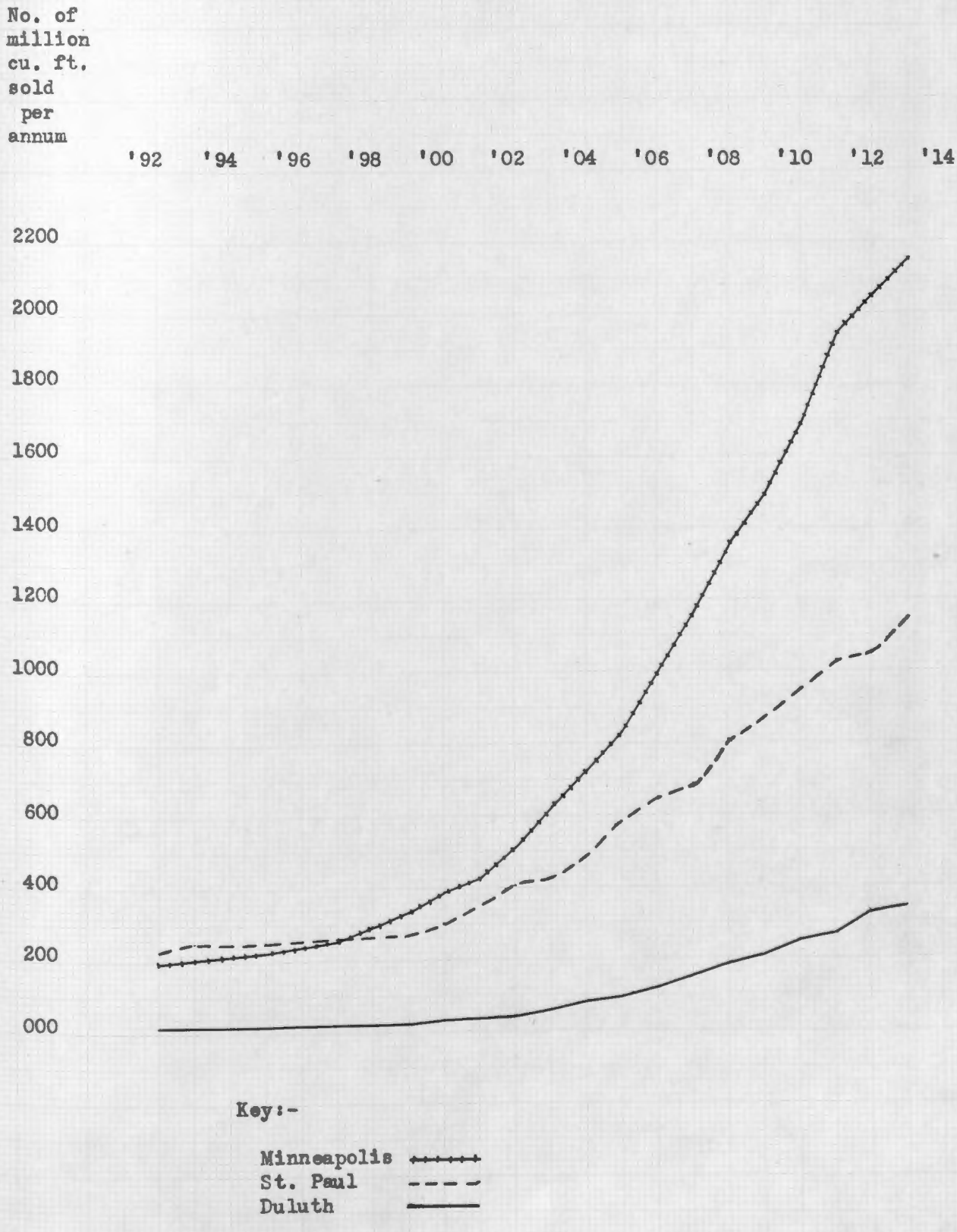
A study of the amount of gas consumed, and the number of people using it in six selected cities illustrates more clearly the wonderful development which has been taking place during the past twenty years. The cities are Minneapolis, St. Paul, Duluth, Winona, Red Wing, and Mankato. They have been chosen because their gas establishments represent more than 95% of the entire industry in this state, and returns from them may safely be called typical of all Minnesota. The reports made by the city officials to the Minnesota Municipal Reference Bureau covering the present status of the various plants have been combined and placed together in the three tables which are given. (Tables IV, V, VI). From Table IV it is apparent that the gas industry in its present magnitude in Minnesota is a recent growth. From 1892 to 1902 the output in the six cities more than doubled, but from 1902 to 1912 the production leaped up more rapidly, increasing by 2,404,065,000 cubic feet, or 176% for the ten years.[a] Diagram "A" makes clear the development in the three largest cities.[b] The Minneapolis output jumped from

a. It is interesting to compare this with the increase of 167% in the value of products from 1899 to 1909. Seepp. 49.

b. This is based on returns in the Brown's Directories (Diagram A.)

DIAGRAM "A"

Illustrating the Yearly Increases in the Sales of Gas in Various Cities of Minnesota, from 1892 to 1913 Inclusive.



198,682,000 cubic feet in 1892 to 2,150,000,000 in 1912; St. Paul's growth was from 250,000,000 to 1,390,000,000 while in Duluth the production increased from 25,000,000 to 325,000,000 cubic feet during those twenty-one years. In the decade 1902-1912 St. Paul's output increased 171% Duluth's 441% and that in Minneapolis 295%.

Table IV.

Showing Quantity of Gas used, 1892, 1902, 1912, and the Percentage of Increase for the 10-year Periods, in Six Leading Gas Works in Minnesota.[x]
000 dropped in stating quantities.

	1892 Cu. Ft.	1902 Cu. Ft.	1912 Cu. Ft.	Per. of Increase '92-02	Per. of Inc. '02-12
Minneapolis	198,682	518,754	2,049,540	262%	295%
St. Paul	250,000	425,000	1,152,700	70%	171%
Duluth	25,000	60,000	325,000	140%	441%
Winona	17,500[y]	32,000	60,000[z]	82%	75%
Mankato	1,000[y]	30,000	37,375[z]	2900%	24%
Red Wing	4,742	14,000	40,000	195%	185%
	496,924	1,079,764	3,664,615	116%	239%

x. Excepting for Minneapolis, these figures are taken from Brown's directories. The earlier figures especially are too large as the companies were tempted to exaggerate to make a good showing. The Minneapolis figures are reports of actual metered sales, as furnished by the company.

y. 1893

z. This is less than for any year since 1904. Highest mark was 55,000 cu. ft. in 1910.

2. Per Capita consumption of Gas.

The consumption per capita, (shown in Table V.) has grown relatively faster in the larger cities. In 1892 Minneapolis used 1152 cubic feet for each resident, in 1912, 6655 cubic feet. In St. Paul the increase has been from 1798 cubic feet per capita in 1892 to 5126 in 1912. In Duluth the percentage of increase was very great, the amounts being 674 cubic feet in 1892, and 3880 in 1912. In Red Wing, however, we find the greatest relative increase of all - a growth from 772 cubic feet per capita in 1892 to 4256 in 1912.[a]

a. This omits Mankato which can hardly be compared with fairness, because the industry had barely obtained a start by 1892.

Table V.

Showing the number of cubic feet consumed per capita, total population in six leading gas works in Minnesota 1892, 1902, 1912[x].

	1892	1902	1912
Minneapolis	1152	2566	6655
St. Paul	1798	2455	5126
Winona	946	1623	3282
Duluth	674	1029	3880
Mankato	108	2830	3605
Red Wing	722	1790	4256

x. The population for 1892, 1902, 1912, have been estimated. The estimates have been based on the relative proportion of growth for each decade given by the census, and each city has been figured separately, so that if there is any error it is very slight. The Minneapolis figures are from the company, the others from Brown's Directories.

3. Numbers of Consumers.

The table showing the number of consumers, (Table VI) gives Minneapolis first place by a large margin, with nearly twice as many, (68,150) on January 1, 1914, as St. Paul, (35,984) amd more than seven times the number in Duluth, (9,510). Comparisons which take the population into consideration likewise place Minneapolis clearly in the lead,[a] for it appears that in Minneapolis more than 300 out of every 1000 souls are purchasers of gas, in St. Paul 150 and in Duluth 115.[b] This statement, however, should not cloud the fact that in St. Paul and Duluth, consumers of gas have been and still are growing more numerous at a rapid rate. Owing to the late establishment of the Duluth Gas and Water Co.[c], the physical peculiarities of the city and the dissensions between the city and the company prior to the municipalization in 1898, we find in 1900 that only 39 people out of every thousand were consumers of gas. The number in 1910, 106 per thousand, represents an increase of 265%, which, relatively, is much larger than the increase in Minneapolis during the same period. St. Paul, too, has been steadily ad-

a. This again excepts Mankato, in which the total number of consumers is less than 4% the number in Minneapolis.
b. If we assume that 5 people are directly benefited by each gas meter in use, the numbers would be per 1000:- Minneapolis, everyone; St. Paul, 750; and Duluth, 675. The 1910 census shows Minnesota to average 5 members to the family. See abstract of the census, page 260.
c. 1883. Supra p.2.

vancing in the use of gas. In Minneapolis, Winona and St. Paul, returns for Jan.1, 1914 indicate some rapid developments during 1913, in the matter of adding new consumers. Winona's increase was 505, a gain of 20 % in one year. The Minneapolis Gas Light Co. added 5443 consumers and the St. Paul Gas Light Co. added 2840 during the past year(1913). The increase in Duluth was relatively unimportant for this year. Among the smaller companies the Rochester Light,and Heat and Power Co., has made a splendid record in recent years under its new management. In 1910 there were but 376 customers of the company while in March 1914 there were 1030.

In Red Wing the annual output has remained stationary at 40,000,000 cubic feet since 1909 and the number of consumers, likewise, has been substantially unchanged since 1910. In Mankato there has been somewhat of a retrogression since the high water mark of 1910 when 55,-000,000 cubic feet were produced. These two cities with their lack of advance in recent years clearly are conspicuous exceptions to the general rule. When we bear in mind that both the number of consumers and the

number of cubic feet produced have increased 400% in Minnesota since 1900, and the population only about 25% during the same time, we cannot but realize the magnitude and growing inportance of the gas industry. From a small beginning as a luxury, it has grown to be a widely used necessity in our larger cities.

Table VI [x]

Showing Number of Gas Consumers Metered in Six Leading Establishments in Minnesota, Januaryl, 1900, 1905, 1910, 1913, 1914.

	1900	1905		1910		1913	1914[y]
	No.	No.	per 1000 pop.	No.	No. per 1000 pop.	No.	No.
Minneapolis..	12040	59	23400	49131	163	62707	68150
St. Paul.....	7500	46	14400	24456	114	33124	35964
Duluth.....	1519	29	3300	8368	106	8650	9510
Winona.....	800	40	1400	2200	118	2450	2955
Mankato.....	500	47	1000	1800	173	1787	1870[z]
Red Wing.....	325	43	700	1291	142	1391	1300
Total.....	22675		44200	87246		110009;	119749

x. This table is based upon the returns in Brown's Directories. The figures for Duluth as given in the Annual Reports of the Duluth Water and Light Dep't., are substantially the same as those given in Brown's Directory.

y. Figures for January, 1914, reported by the cities to the Municipal Reference Bureau.

z. Mankato figures include North Mankato.

C. Rates charged for gas in Minnesota from earliest times down to the present.

1. Rates in earliest times.

Rates for gas at the beginning of the industry were extremely high.[a] We read that the St. Paul Gas Light Co. originally charged $7.00 a thousand cubic feet.[b] In 1873, after about 20 years of existence, the St. Paul company was still selling for $5.00. The Minneapolis Gas Light Co. had at that time a somewhat lower price of $4.50 and in Winona it was even less, or $4.00 a thousand cubic feet.[c] In fact it appears that all through the seventies and eighties Winona was favored with lower rates than those in the Twin Cities.[d] From 1873 down to 1876 the rate in Winona was $4.00, and from 1876 to 1880, $3.50. St. Paul, on the other hand, paid $5.00 till 1880, and Minneapolis did not secure the $3.50 rate till 1879. By 1887, however, the rates in both Minneapolis and St. Paul were less than those in

a. Different sources differ somewhat as to the details of the rates in force in the earliest periods. I have endeavored to follow those which appear to have the greatest likelihood of accuracy.
b. City of St. Paul. Published by the Pioneer Press, 1897.
c. A compilation of rates in force from 1873 to 1887, given in Brown's Directory for 1887, pp 83-91. This is the most authentic record of rates during the period named.
d. Ibid.

Winona and have remained so ever since. The accompanying diagram,(diagram "B") illustrates the decline in rates in these three cities from 1873 to 1887. It is interesting to observe that in 1885 all the cities, (including Mankato which has not been plotted), had the same rate of $2.50 a thousand cubic feet. At no time since has there been such a coincidence, nor is there likely to be one again.[a]

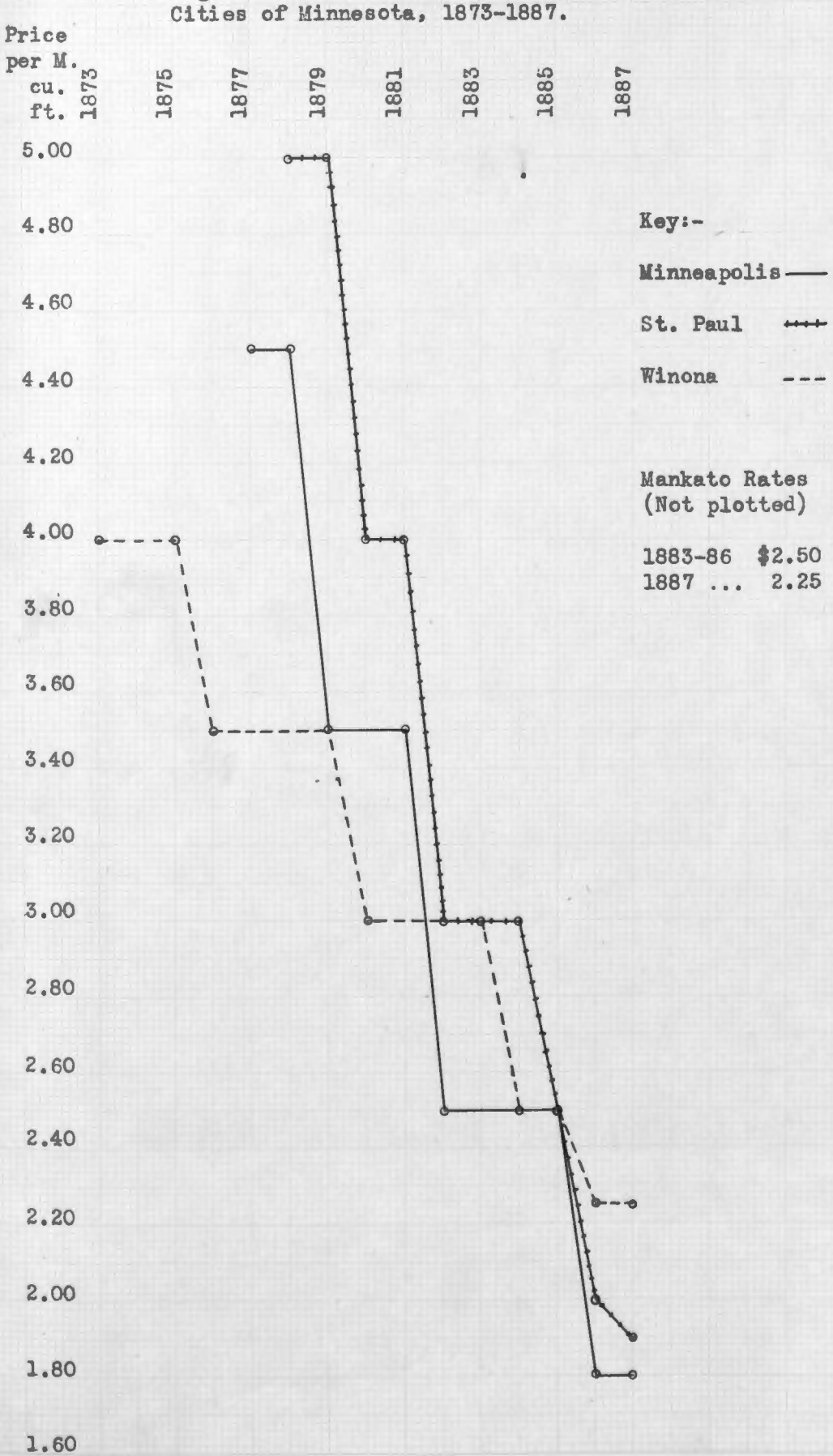
2. Introduction of Water Gas.

The merest glance at diagram "B" calls attention to the fact that during the late 70's and early 80's prices fell with great rapidity. This remarkable decline was caused by the introduction of the water gas process, invented by Du Motay and Lowe. The gas is produced by passing steam over white hot coals and then adding vaporized petroleum. This gas, especially during the early years was much cheaper than ordinary coal gas. It needed but a very small amount of coal, and greatly reduced the labor cost. The Massachusetts Gas Commission in 1890 made an investigation of the develop-

a. These rates, taken from Brown's Directory cited above, may be slightly incorrect. In 1876, the Annual Report of the Minneapolis Board of Trade (p 32) refers to the price of gas for the city of $3.50 a thousand cubic feet, whereas Brown does not mention this rate till three years later. It may be, however, that the Report was referring to gas for public lighting. According to Hudson, "Half Century of Minneapolis"(1908) pp 519-520, gas sold in 1877 for $4.00, whereas Brown's rate, not given for that year, was $4.50 the following year. Brown is probably more reliable than Hudson.

DIAGRAM "B".

Illustrating the Decline in Prices Charged for Gas in Various Cities of Minnesota, 1873-1887.



ment of water gas in the United States, and their report throws considerable light on the subject.[a]

"A ton of good gas coal will yield approximately ten to eleven thousand feet of gas. In order to secure the candle power usually supplied in this state there must be added about 10% of cannel or something more than 5 gallons of oil, equivalent to more than one gallon per thousand cubic feet.

"In the production of illuminating water gas there is commonly used more than 50 pounds of hard anthracite coal and from five to six and one-half gallons of oil for every thousand feet of gas, although in the very best works and under very favorable conditions these quantities may be slightly reduced. These two items nearly make up the cost of water gas in the holder.

"In coal gas the cost of labor is a most important element. It often nearly equals one-half the gross cost of materials, and in many cases does not vary much from the net cost of coal. In water gas the cost of labor is small."[b] It is also in point to add, that part-

a. The cause of this investigation and some earlier ones the commission made, forms an interesting chapter in the history of gas in Massachusetts. In 1880 the well established coal gas companies secured the passage of a law practically forbidding the sale of water gas, and for ten years there was waged a bitter struggle to secure the repeal of that law. See John H. Gray's, The Gas Supply of Boston 1. Quart. Journal of Econ. Vol. XII. p.419.
b. Report of the Massachusetts board of Gas Commissioners for 1890. p.6.

icularly in the earlier days the oil used for enriching was very cheap, and was used for no other purpose.[a]

This cheaper form of gas, first used commercially in 1873,[b] was in another decade and a half widely accepted throughout the country. Under the influence of this cheaper form of production the St. Paul Gas Light Co. reduced its selling price from $5.00 in 1879, to $2 $3.50 in 1885, a cut of 50% in six years. The Minneapolis price was lowered from $4.50 to $3.50 in 1878-9, from $3.50 to $2.50 in '81-'82, and from $2.50 to $1.80 in '85-'86. A more pronounced series of reductions cannot be well imagined. In Winona the rates were reduced from $3.50 to $3.00 in 1880 and again to $2.50 in 1884. Changes so phenomenal as these were the result of nothing short of a revolution in the industry.

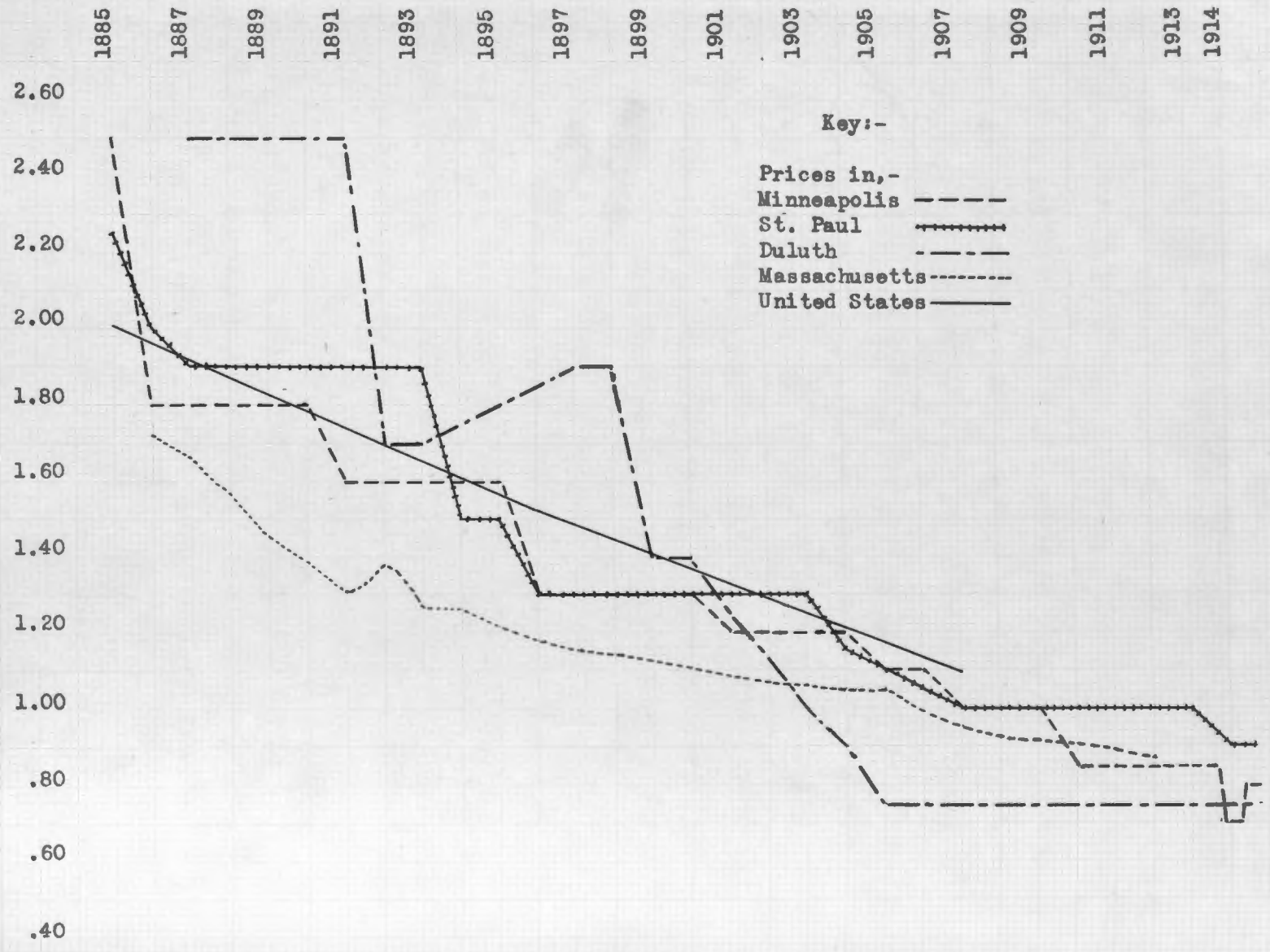
3. Comparison of Minnesota rates with prices elsewhere.

Since 1887 there have been some most interesting re-adjustments in rates charged in Minnesota. Diagram "C" indicates the general trend of rates in the three largest plants in Minnesota since 1885, compared with

a. Circular #32 of the Bureau of Standards, 1912. Dep't of Commerce and Labor, p 28. This also contains a clear statement of the reasons why water gas became widely adopted in such a short time.
b. Twelfth Census, Vol. X, part IV, p 714.
c. See the Massachusetts Gas Report for 1899, p 4.

DIAGRAM "C".

Illustrating the decline in prices since 1885 in various cities of Minnesota, as compared with the prices for gas in Massachusetts, and with average prices for the whole country.



the average rate in Massachusetts (1885-1912) and with the average rate in 172 plants throughout the U. S. from 1887 to 1907.[a] Minnesota rates in 1886 were higher than the general average over the entire U. S. but have decreased more rapidly. The general level of rates in 1907 was $1.09, and at that time Minneapolis and St. Paul both had dollar gas, while in Duluth the price was $.75. The average price for the whole country has not been brought down to date, but it is not likely that the general decline since 1907 has been as rapid as in Minnesota.[b] Rates have also decreased in Minneapolis, St. Paul and Duluth more rapidly than in Massachusetts. The cities of the Bay State enjoyed a relatively low rate in 1885 ($1.71), but since then the percentage of decrease has not kept pace with that in Minnesota, so that the average rate of Massachusetts today ($.872) is but slightly less than that of St. Paul ($.90) and is higher than that of Minneapolis, ($.80) and Duluth ($.75). Perhaps as forcible an illustration of the way in which prices have been reduced as may be obtained, is to study the average bills which the con-

a. The average rate for the whole country has been taken from a compilation of prices charged for gas in various cities of the U. S. 1887-1907, made by the Milwaukee Gas Light Co. The Minnesota rates are from the same source, brought down to date. The Mass. rates are taken from the report of the Mass. Record of Gas and Electric Com. for 1912, p 136.

b. There has been a pronounced movement especially in St. Paul and Minneapolis during the past five years to demand large reductions in prices.

sumers have paid from year to year. This has been worked out in Minneapolis by the Minneapolis Gas Light Co. In 1895 the average consumer paid $4.79 a month for his gas. By 1900 his bill had been reduced to $3.36 a month. Five years later it was $3.08. After the rate reduction to $.85 in 1910 it was down to $2.36. This was as low as the bills ran, except after the 70 cent rate went into effect last November, when the average bill dropped to $1.94. It is noticeable that immediately following any rate reduction there is a perceptible falling off of the monthly bill.

4. Rate Reductions in Duluth.

From 1890 till the present day rates have continued to decline in practically all Minnesota cities. In Mankato the changes roughly have been as follows: In 1890, $2.50; 1900, $1.90; 1905, $1.40; 1912, $1.25. In Winona the price reached $1.25, in 1908 where it has been since. Red Wing has had a rate of $1.35 since 1910. Of all recent rate reductions, however, the most dramatic were the series of decreases made in Duluth after the adoption of Municipal ownership. On August 1,1898, when

the city purchased the plant, the prices for gas were $1.90 for illuminating purposes, and $1.00 for fuel. Four months later, December 1, the price for illuminating gas was lowered $.35. In another four months (April 1, 1899) it was further reduced $.20. It remained at the resulting figure , $1.40, for a year and three quarters. Thereafter the city regularly lowered its rates on the first day of the year On January 1, 1901, a rate of $1.25 went into effect; one year later $1.15; in 1903, $1.00, and in January 1, 1904 gas for all purposes was reduced to $.90 a thousand cubic feet. Six months later gas for fuel was lowered to $.75, and finally on October 1,1905, both fuel and illuminating gas were placed at $.75.[a] In eight years the prices charged to the citizens of Duluth were lowered from $1.90 to $.75, a reduction of 60%.

This series of rate decreases is unique in contemporaneous gas history in America. At no time since the revolution in prices wrought by the introduction of water gas, has there been such phenomenal reductions in so short a time. Even the water gas reductions were no greater on a basis of percentages. This change is distinctive,

a. Annual Report of the Duluth Board of Water and Light Commissioners, 1911, p. 39. Gas for heating and for manufacturing purposes was further reduced to $.50 a thousand cubic feet, Jan. 1, 1906.

too, because of the unusually low rate finally arrived at. Only three other cities in America in 1907 sold artificial gas as cheaply, - Wheeling, Cleveland, and Cincinnati.[a] In these three cities, conditions were unusually favorable for low prices, chiefly because of their nearness to the coal supply.[b] Cleveland and Cincinnati, too, were many times larger than either Duluth or Wheeling. Duluth clearly holds a distinctive place in the history of gas developments during the opening years of the twentieth century.[c] This distinction at once raises the question ofthe efficiency of municipal ownership. For the present, however, we are concerned merely with recording the facts concerning the rates charged. Assuming that bookkeeping methods have been

a. Report of the National Civic Federation on Municipal and Private Operation of Public Utilities, 1907. Part 1, Vol. 1, p 158. See also, Prices in Gas in Various Cities of U. S. cited above.

b. Ibid. Part II. Vol. 1, p 574. The price for gas coal in Wheeling was reported at the low figure of $1.69 a ton at the railroad siding, and $1.90 after drayage had been paid.

c. It is only fair here to add that the exceedingly low prices in Duluth were undoubtedly due to the establishment of the Zenith Furnace Co., which manufactures coke, and sells gas as a by-product. On August 1, 1904, it made a contract with the city to supply the municipal plant with gas at $.45 a thousand cubic feet when the annual sales amounted to 100,000,000 feet. See the Duluth Report for 1904, p 14. More recently the city has been paying $.40, and at present it pays only $.37½. This does not detract from the significance of the reductions, however, for when Duluth first sold gas for $.75, the price in Superior, which also was supplied by the Zenith Co., was $1.40.

correct,[a] we may say that the low rates have been in part due to municipal ownership.

Municipal regulation[b] has also resulted in some striking reductions, particularly in Minneapolis. In 1910 when the city granted its new franchise to the Minneapolis Gas Light Co., it obtained a rate of $.85 for private consumers and $.65 for the city. The municipality also reserved the right to re-adjust rates every five years, commencing in 1913. At its first opportunity the council passed an ordinance setting the price at $.70 a thousand cubic feet. This rate was sustained temporarily by the Supreme Court of Minnesota in October, and was in force from November, 1913 to April 1, 1914. The rate finally settled upon is $.80 for 21 months commencing April 1, 1914, and $.77 thereafter for 34 months.[c] St. Paul, aroused by the low rates in its Twin rival, has been agitating for cheaper gas for several years, and in 1913 secured a price of $.90 a thousand cubic feet, for ordinary domestic consumption, and this year (1914) a rate of $.85 is contemplated by the council.[d]

a. An assumption which is vigorously denied in many quarters, especially by privately owned companies.
b. Discussed more fully in Ch. 5.
c. See Minneapolis Journal or Tribune, April 8, 1913.
d. In St. Paul lower rates are allowed since 1913 for larger quantities.

TABLE VII

Showing Miles of Main, Number of Consumers Per Mile of Main, and Number of Cubic feet of Gas sold per Mile of Main during - 1913. x

City	Miles of Main	Consumers Per Mile of Main	Number of cu. ft. sold per mile of Main
Minneapolis[y]	487.7	138	4,922,164
St. Paul	344[z]	164	3,576,352
Duluth	132	72	2,574,432
Winona	34	87	1,914,000
Mankato	19.77	94	1,951,440
Red Wing[n]	17	76	2,456,000

x Table based on returns to Municipal Reference Bureau except where otherwise specified.
y Minneapolis figures, from the Company.
z Statement from Mr. Pelton, Supt. for the Gas Dep't, St. Paul Gas Light Co. - Figures for April 1, 1914.
n Figures for Red Wing are unreliable, not reported to to Municipal Reference Bureau.

5. Comparison of Rates in Minneapolis, St. Paul, and Duluth.

The rates in the three largest cities offer a good basis for comparison. The rates as we have seen, are: Duluth, $.75 and $.50; Minneapolis, $.80 and St. Paul, $.92. In Duluth the plant is municipally owned, and in Minneapolis and St. Paul the city councils have the power to make rates subject only to the courts review on reasonableness. So it is safe to assume that the lighting rates, particularly, are as low as can be expected, since in every case the city would have the incentive to reduce prices.

In Duluth the cost of manufacturing is lower than in the Twin Cities. Gas is purchased at $.37½ per M. cubic feet from the Zenith Coke Co., ready for distribution, and the city has to carry only the distribution costs. These, moreover, are rather low because when the city lays mains past the premises of a consumer, he must agree to pay 8% of the cost, and he also pays for the service pipe from the curb to the house. Moreover, each consumer in Duluth uses more gas each year (35,756 cu. ft.)

than in any other city in the state, (34,388 cu.ft. in St. Paul, and 33,306 in Minneapolis) [a] On the other hand a reference to Table VII shows that the number of consumers counted per mile of main is only 72 in Duluth, just a trifle more than half the number in Minneapolis, and less than the number in any of the first six cities. The result is that in spite of the larger number of cubic feet each consumer burns, the amount of gas sold per mile of main is much less in Duluth than in either Minneapolis or St. Paul. For every mile of main, the income to the Duluth municipal plant, is probably not much more than half the income per mile in Minneapolis. For this reason, cost of distribution per unit, in this respect, should be much less in Minneapolis than in Duluth. And the total output in both of the Twin Cities is many times as large,[b] another factor tending to diminish the manufacturing cost per unit in the Twin Cities. Just how far these higher costs in Duluth are offset by the low price paid to the Zenith Coke Co., is not plain. But it appears reasonable to believe that the low prices in Duluth are not solely accountable to the contract with the Zenith

a. See Table II p. 50. The difference between Minneapolis and Duluth, in favor of the latter, is probably due to the low fuel rates in Duluth.

b. See Table II

Coke Co. It seems only fair to state that the managers of the municipal plant have done exceedingly well for the citizens.

The differences between prices in St. Paul and Minneapolis are easily explained. St. Paul charges the gas company a 5% gross earnings tax which explains the major portion of the higher price in that city. The difference is further accounted for by the greater volume of business and the greater saturation in Minneapolis. The Minneapolis Gas Light Co., in 1913 sold approximately 3,150,000,000 cubic feet to 68,150 consumers, whereas the St. Paul Gas Light Co., sold 1,237,000,000 to 35,964 consumers. The difference in the cost of distribution is evidenced by the facts: first, that in Minneapolis there are 138 consumers for each mile of main and only 104 in St. Paul, and second, that in Minneapolis there is sold about 5,000,000 cubic feet per mile of main and in St. Paul only 3,576,000 cubic feet, Finally the St. Paul Company has relied more extensively on water gas than the Minneapolis Company, and the recent enormous advances in prices of oil have greatly increased the

cost of producing water gas. As long as these conditions remain, the prices will be lower in Minneapolis than in St. Paul. If the city of Minneapolis should purchase the gas works, as a result of the present agitation for municipalization[a], it is probable that the price would be lowered to $.70, though whether or not it would long remain at this point, is another matter.

6. Rates in other Cities in Minnesota.

Other cities throughout the state pay higher rates than those in force in the Twin Cities.[b] The compilation of rates made by the Minnesota Municipal Reference Bureau shows that St. Cloud has the highest rates of any city of importance in the state, $1.75 and $1.25 for illuminating and fuel gas, respectively. Rochester, Renville and Austin all pay $1.50 for illuminating gas for ordinary purposes. Northfield, which is supplied from Faribault, pays on a graduated scale from $1.44 down to $1.04. The Owatonna company charges a base rate of $1.40 with quantity discounts. In Stillwater

a. See Minneapolis papers for April 10 and later in month.

b. See Table VIII.

TABLE VIII

Prices for Gas (a) in Leading Cities of Minnesota.
Jan 1, 1914.

Minneapolis	301,408	$0.80	
St. Paul	214,744	.90	First 10,000 cu. ft.
		.85	Next 40,000 " "
		.75	Over 50,000 " "
Duluth	78,466	.75	Heating and Mnfg. $0.50
Winona	18,583	1.25	Industrial Purposes:-
		1.00	20,000 to 30,000 cu. ft.
		.90	30,000 " 40,000 " "
		.80	Over 40,000 " "
St. Cloud	10,600	1.75	Fuel Gas 1.25
Mankato	10,365	1.25	Commercial-25,000 cu. ft
		1.10	25,000 to 50,000 " "
		1.00	50,000 to 100,000 " "
		.95	100,000 " 200,000 " "
		.90	200,000 " 300,000 " "
		.85	Over 300,000 " "
Stillwater	10,198	1.36	Fuel gas $1.04
Red Wing	9,048	1.35	
Faribault	9,001	1.30	Up to 10,000 " "
		1.20	10,000 to 25,000 " "
		1.10	25,000 " 50,000 " "
		1.00	50,000 " 100,000 " "
		.90	100,000 or over " "
Rochester	7,844	1.50	First 1,000 " "
		1.40	Next 4,000 " "
		1.30	" 5,000 " "
		1.20	" 5,000 " "
		1.10	Over 15,000 " "

a Prices net, except where otherwise specified. Taken from Reports to the Municipal Reference Bureau.

TABLE VIII Continued

Austin	6,960	$1.50	
Albert Lea	6,192	1.35	
		1.22	Amounts more than 10,000 cu. ft.
Owatonna	5,658	1.40	(gross)
		1.30	2,000 cu. ft
		1.20	2,100 to 5,000 " "
		1.05	5,100 " 10,000 " "
Moorhead	4,840	1.35	per M for the first 10,000 " "
		1.17	next 15,000 " "
		1.08	" 25,000 " "
		.99	" 50,000 " "
		90	" all over 100,000 " "
South St. Paul	4,510	1.15	per M first 10,000 " "
		1.00	" " Next 40,000 " "
		.90	" " over 50,000 " "
Northfield	3,265	1.44	" " first 10,000 " "
		1.28	10,000 to 25,000 " "
		1.20	25,000 " 50,000 " "
		1.12	50,000 " 100,000 " "
		1.04	over 100,000 " "
West Minneapolis	3,022	1.26	
Renville	1,182	1.50	

the prices are $1.36 and $1.04 net, for illuminating and fuel gas, respectively. Albert Lea, Moorhead and Red Wing charge $1.35 for ordinary amounts, but Albert Lea's price is lower for all over 10,000 cubic feet, and in Moorhead there is a regular graduated schedule of prices. In Faribault $1.30 is charged for ordinary purposes with lower prices for larger quantities. In Winona and Mankato $1.25 is the base price with a sliding scale for industrial gas, and in South St. Paul we find the lowest rate outside of Duluth and the Twin Cities, $1.15 a thousand cubic feet for the first 10,000 feet. Among the gasoline gas plants, Lamberton and Madelia have the lowest price, $1.40

We might say in general that the larger the city the lower the rate. There are so many exceptions to this rule, however, that it is of little value in determining principles of rate making. The kind of gas manufactured, the difference in costs of materials, the effectiveness of public supervision all enter in to determine the rate, and frequently some one of these is

of much greater importance than the mere size of the city or output of the plant. Thus in Duluth, as we have seen, the existence of the great coke ovens and the municipal distributing system explain the low rates there. The temporary rate of $.70 in Minneapolis was due to municipal control over rate making. The high rates in several of the smaller cities are probably due more to a lack of effective regulation than to mere smallnes of population.

D. Methods of Rate Making for Gas.

1. Three principal methods defined.

The systems of rates which are in force in Minnesota, like those generally, may be divided into three classes, 1, Horizontal rates, where the same price is charged per thousand cubic feet irrespective of quantities sold or the purpose for which the gas is used. 2, Rates, in which a difference is made according to the kind of consumption, that is to say, where lower rates are made for cooking or manufacturing gas than for illuminating gas, and 3, Graduated rates, where discounts or lower prices are granted to consumers of large quantities.[a]

In the first named class are Minneapolis, Red Wing, Austin, West Minneapolis, Renville, and practically all of the small gasoline and acetylene plants. In the second class, or where lower prices are made for cooking of manufacturing, we find Duluth, St. Cloud and Stillwater. Duluth's system is not precisely on the same basis as the others, for the lower rate $.50

a. For this whole discussion, see Table VIII.

is made only for heating and manufacturing purposes. Gas for cooking takes the higher rate. In Stillwater, however, fuel gas sells for $.32 less, net, than illuminating gas, and in St. Cloud it is $.50 less. In the third class where a scale of "step rates" is in force, we find Winona, Owatonna, Mankato, Faribault, St. Paul, South St. Paul, Northfield, Albert Lea, and Rochester. In Winona and Mankato the step rates apply only for industrial gas, while for domestic purposes all gas sells for the same price. In the other cities, having "step rates", however, those rates apply irrespective of whether the consumption is domestic, or industrial.

2. Decline of "Dual" System.

The second class of rates, or that maintaining a distinction between cooking and illuminating gas seems to be disappearing.[a] Almost all of the cities in Minnesota at one time made such a classification of its prices. There are three reasons why this practise has become less customary. It is not economical, in

a. This is true over the entire country. Of cities over 100,000 population in 1912, 25 were buying gas on essentially a uniform scale, 20 on a graduated scale, and only 2 on a dual scale, i.e. separate rate for fuel and illumination. One of these two, Louisville, has two companies, one of which sells on a step scale. Prices for gas 1908-1912 in cities of over 100,000 population, compiled by the Milwaukee Gas Light Co.

the first place, to install two meters if one will serve the purpose.

a. Decreased Importance of Illuminating Gas.

A second reason, which has had much more influence, is the decreased importance of illuminating gas. When gas was used in open flame burners it had to have a high candle power in order to be of real service. Ordinary manufactured gas, whether distilled from gas coal, made by the water gas process, of secured as the by-product of coke ovens, had to be "enriched" by the addition of petroleum vapors to reach the desired candle power.[a] In water gas, especially, the enriching process forms the greatest factor of expence,[b] and in other gases it forms no inconsiderable item, especially since the advances in the price of oil. Gas for cooking, on the other hand is not required to have high candle power, but rather heating value. Moreover, since the general adoption of the Welsbach burner principle in recent years. heat becomes the main factor in lighting. It is no

a. See circular of the Bureau of Standards, No. 32, 1912, for required standards of candle power in the U. S.
b. The great demand for oil for automobiles and other purposes has caused the Standard Oil Co. to make a big increase in the price of enriching oils. The result is that the cost of water gas, in some places has increased $.10 to $.15 a thousand cubic feet in two or three years. See Report of the Joint Committee on Calorimetry, to the Second District Public Service Commission of N. Y. 1913, pp. 7-10 and especially section 9.

longer the illuminating qualities of the gas itself which causes the light, but rather the fact that the mantle has been heated to incandescence. Thus it has come about that gas which is the most desirable for cooking or manufacturing because of its heating value is also best suited for lighting.[a] Morever it is likely that in the near future candle power standards will pretty generally be discarded.[b] Since there is less a and less difference between cooking or manufacturing and illuminating gas, it is not a wonder that we have seen the difference in rates disappear.

b. Some Effects of Competition with Electricity

The third reason is that electricity came along and forced down the gas lighting rates.[c] The gas manufacturers could not hope to hold their share of domestic lighting in face of its popular rival unless rates were made as low as possible. Especially was this true, after the perfection, in recent years, of the Mazda and Tungsten lamps, which gave a better and a cheaper light than the old carbon incandescents. The effects of this

a. "Except in the larger cities it has been estimated that less than 10% of the gas is employed in open flame burners where candle power is of primary importance to the consumer." Circular of Bureau of Standards, cited above p.28.
b. The N. Y. Report on Calorimetry above cited, contains the best statement of the reason for this which have been given.
c. This idea was first suggested to the writer by Professor John H. Gray.

competition have been apparent in Minnesota. While Minneapolis never has made the distinction between fuel and lighting gas, (at least not since 1895) and St. Paul has not for twenty years, experience in other cities se seems to bear out this statement. In Red Wing the illuminating price was brought down to the fuel price was in 1904; in Duluth, 1906; in Winona, 1909, and Mankato, 1911,[a] and Moorhead has recently abandoned the dual scale of prices. In some cases electricity may simply have prodded the gas companies on to more rapid action; in others it may have been the whole determining factor. Whichever the cause in each particular case, the classification of prices according to illumination and non-illumination purposes, seems to be growing less important.

3. Uniform Rates vs. the "Step Scale.

The great question in making gas rates today is the controversy between those who believe in a uniform scale, and those who believe in a graduated scale. That is to say, should the rates be the same for all purposes and all users, or should the large

a. Brown's Directories for 1904, 1906, 1909, 1911.

consumers be favored with relatively lower prices. In perhaps a majority of places where the cities in Minnesota have an influential voice in rate making, as in Minneapolis and in most municipally owned plants, it has been the tendency to adopt the uniform or horizontal level of rates, and whenever reductions are made to demand horizontal decreases. On the other hand in the privately owned plants subject only to slight supervision, we generally find the step scale in force. This is especially true of the Byllesbye plants, at Northfield, Faribault, Moorhead, Mankato and Stillwater. It is probably safe to say that gas companies generally would prefer the step scale. Thus the Minneapolis Gas Light Company would abandon its present horizontal schedule if they could secure permission to do so just as the St. Paul Company did recently. Let us inquire into the reasons for this.

a. Graduated Rates More Profitable.

In selling gas large individual sales are much more profitable than the small ones. This point is made clearer by referring to Table IX. A careful examination

TABLE IX

Showing the Percent of Bills Rendered for various amounts of gas in Milwaukee and Minneapolis a

Consumption of Gas up to -	Accumulated Per cent of Total Bills Rendered. Mil	Mpls	Accumulated Per cent of Total Gas used Mil	Mpls
500 cu. ft	9.94	9.56	.90	1.05
1,000 " "	22.20	24.85	4.07	5.30
1,500 " "	36.26	39.16	9.90	11.71
2,000 " "	49.66	53.13	17.56	20.33
2,500 " "	60.83	63.69	25.72	28.68
3,000 " "	69.44	72.04	33.36	36.69
4,000 " "	80.97	82.54	46.24	49.33
5,000 " "	87,47	88,64	55.56	58.79
6,000 " "	91.30	92.15	62.28	65.45
7,000 " "	93.68	94.30	67.22	70.26
8,000 " "	95.21	95.63	70.89	73.70
9,000 " "	96.22	96.54	73.63	76.37
10,000 " "	96.92	97.18	75.75	78.48
15,000 " "	98.25	98.61	81.05	84.41
20,000 " "	98.72	99.12	83.71	87.46
25,000 " "	98.96	99.37	85.45	89.40
50,000 " "	99.36	99.79	91.13	94.44
100,000 " "	99.54	99.95	94.20	98.05
over 100,000 " "	100.00	100.00	100.00	100.00

a The Milwaukee figures may be found in Milwaukee vs Milwaukee Gas Light Co. 12 W. R. C. R. 441, 487. The Minneapolis statistics were prepared to be used in trial this spring, but inasmuch as the controversy was settled the figures have not been made public. These, and most of the other statistics relative to Minneapolis were very generously supplied to the writer by Mr. W.H.Levings, secetary of the gas company.

of the statistics here collected will show that the great buld of consumers use a relatively small amount each month. Thus in Minneapolis more than half the total number (53.13%) use not more than 2,000 cubic feet apiece each month, or only 20.33% of all the total gas sales. Looking further along it will be found that 82% of the consumers use only 49% of all the gas sold every month. When we include all who use up to 8,000 cubic feet per month, we have accounted for 95.63% of the total number of consumers. But the remaining 4.37% use 26.3% of all the gas sold. The parallel figures from Milwaukee are substantially the same, showing that similar conditions prevail generally. In their trial last fall the Minneapolis Gas Light Co. submitted figures which show that 2½% of their consumers used from 285,000 to 290,000 cubic feet per month. The capital outlay, however, and all expenses, except those of materials, are very largely the same for large and small consumer alike. In Madison, Wisconsin, it was found

a. Minneapolis Gas Light Co. vs. Minneapolis, 142 N. W. 728.

that the individual "consumer cost" of gas was $.517 which remained the same whether 1,000 of 1,000,000 cubic feet were consumed per month.[a] In Milwaukee the fixed cost per consumer was found $1.15 whether 1,000 cubic feet or 20,000 was used.[b] It is evident from this that a large addition of small consumers may entail so extensive a program of laying mains, and may so increase the maintenance charges, that such new consumers may prove a source of loss rather than gain to the company. In the Milwaukee case just cited, the Wisconsin Commission estimated that 70% of the consumers in that city were securing gas at less than cost.[c] The Minneapolis Gas Light Co. has prepared tables which likewise show that their profits come from a small percentage of their consumers. During the past two years this company has secured about 10,000 new consumers. To do so, however, it had to lay more than 60 miles of mains, and it is doubtful if these 10,000 customers will be as great a source of profit as will the Ford Motor Co. alone in Detroit, Michigan. This company in 1912 contracted to

a. State Journal Printing Co. vs. Madison Gas and Electric Co. 4W.R.C.R. 501, at p. 737. This cost was for the fiscal year ending June 30,1909.
b. City of Milwaukee vs. Milwaukee Gas Light Co. 12 W.R.C.R. 441 at p. 485, (August 14, 1913)
c. This whole matter is thoroughly and carefully considered in the cases just cited. See also City of Beloit vs. Beloit Water, Gas and Electric Co. 7 W. R. C. R. 187 especially pp. 350-356.

to purchase from two to four million cubic feet a day with continuous service and for this it was to pay the price of $.35 a thousand cubic feet for all in excess of 2,000,000 cubic feet a month.[a] While this is the lowest price on record for artificial gas,[b] owing to the enormous quantity used and the steadiness of the demand, (twenty four hours daily) it, no doubt, will be a source of great profit to the company. We could sum this up with the statement that if we are to apply the principles of cost accounting only, in making rates, we should be justified in establishing a graduated scale.

b. Influence of Electric Competition on "Step" Rates.

Another important factor is electric competition. Most cities have properly approved of a graduated scale of charges for electric service, the gradations based both on the load factor and quantity purchased. In

a. Letter from Detroit City Gas Company, March 12, 1914. The sliding scale, which applies to the company is as follows:

First 50,000 cubic feet	$.75 per M.
Next 50,000 cubic feet	.65 per M.
" 100,000 cubic feet	.55 per M.
From 200,000 to 2,000,000 cubic feet	.45 per M.
Over 2,000,000 cubic feet	.35 per M.

The Ford people, however, "took over some of the overhead charges, cost of running the mains to them, cost of service regulators and cost of meters."

b. This low figure is probably the result of potential competition from natural gas.

Minneapolis, for instance, the General Electric Co. convinced the city council that 8¢ a kilowatt hour for all uses with purely quantity discounts was wrong, and a complicated scale, taking account of the load factor as well as the quantity, was put in force.[a] Probably 95 percent of electricity users in Minnesota live in cities where a graduated scale is employed. From the very nature of electricity the system of rates could not well be otherwise.

When gas and electricity are competing, if the gas companies cannot make lower rates to large consumers, they will be driven out of that class of business. Even in the city of Duluth, where gas sells for the low price of $.50 a thousand cubic feet, there are but few gas engines in use, because the electric rates are so much more favorable, (2.4¢ a kilowatt hour for the same type of users). The municipal water plant itself, instead of using the city's gas to pump its water, buys current from the Great Northern Power Co. at from 3/8¢ to ½¢ per kilowatt hour. It is a significant fact that the

a. See U. S. Census Bureau, Central Light and Power Station, 1907, pp. 120-121.

municipal gas plant today is considering the establishment of a graduated scale, adjusted to all classes of users, instead of two classes.[a] In Wisconsin, the commission regularly approves of a graduated scale, when that scale conforms in the large to costs.[b] In Minneapolis, on the other hand, the gas company finds itself shut out of the most of this more desirable field.

c. Public Policy and the "Step " Scale

This whole matter raises the most serious problems of public policy. If we view the question solely from a stand point of efficiency and cost accounting, we are compelled to favor graduated rates. On the other hand it must be recognized that the benefits of gas should be extended to as many people as possible and at as low prices. When left to themselves, the companies are too apt to show undue favoritism to the large user, or to themselves. Thus in 1912 the gas company operating in Chicopee, Mass. was about to be consolidated with that in Springfield. The Springfield Gas Light Co. was a large concern, selling gas to several localities for $.85.

a. For this information the writer is indebted to Mr. D. A. Reed, Manager of the Water and Light Department of Duluth. See also p.7 of the 1913 report of the Department.
b. In the Beloit Case, just quoted, it was found that the existing schedule placed and undue burden on the small consumer. So the highest rates were lowered, and several changes made in the steps.

The price in Chicopee was $1.25. The consolidating company proposed to reduce this price to $1.15, but even at that price, it would be making a very large profit. The commissioners of Massachusetts, refused to approve the consolidation till the company agreed to reduce the price to $1.00.[a] While this did not involve a case of graduated rates, the principles of public policy underlying are the same as those we must consider in the step rates. How much is the public to share in the benefits from the most economical and efficient methods of productions and sale, and how much is private initiative to be awarded? In the Springfield-Chicopee case the Commission refused to allow the company all it proposed to take, but did not allow Chicopee all it desired. (The City of Chicopee demanded an immediate reduction to the rate of $.85 which all the other cities were paying). In the Beloit case, above mentioned, and in other cases, the Wisconsin Commission has found a great number of examples of discriminations, and unfair adjustments of the schedules in all forms of public utilities.

a. Mass. Gas and Electric Com. Rep't Vol. 28, p. 67.

d. Conclusions Regarding Graduated Rates.

The Wisconsin Commission too, has not made rates, on a strict cost accounting basis. If it had done so, it would have raised the rates of 70% of all consumers in Milwaukee, and for the smallest the increases would have been prohibitive. In all of the cities where step scales are in force the rates to the small consumer have been placed lower that strict cost accounting would direct. The added profit from the larger consumer is calculated to compensate for the smaller profit from the smaller consumer. In Detroit, for instance, the gas company may earn enough from the Ford contract to justify a reduction of the maximum rates. Thus it is apparent that where step rates are in force there is no absolute guide. Where the regulating authority is weak, or unintelligent, a uniform scale may be the only means of preventing unjust justification for a city's insisting upon the horizontal scale.[a]

a. It has been urged that to permit step rates is to turn ourselves backwards to the days of rebating and railroad discrimination. It is urged, that just as we have been striving to secure uniform rates for all users of the railroads, so we should secure uniform rates for users of gas. There is one great weakness in this argument, namely, the fact that those who advance it fail to recognize the most serious of the injustices in rate making, such as the basing point system, low transcontinental rates, and all discriminations between the long and short haul, arise from a disregard of cost accounting principles. In making gas rates on the other hand, cost accounting points inevitably towards graduated rates.

If we could be reasonably certain that the public authority was strong enough to control the situation, it would appear to be the wise thing to approve a carefully guarded form of "step rates." Minneapolis or St. Paul for example, two cities which have complete authority over their gas companies might well permit a graduated scale of rates. If would probably be good policy, too, in that the companies affected would be less opposed to a reduction in their maximum rate, if they were allowed to enter more fully into the field of industrial gas.[a]

a. This whole discussion has not considered "regressive" rates i.e. the unscientific form of graduated rates. A true graduated scale charges a primary rate for the primary amount used, a lower rate for the quantity used above the primary amount, etc. A regressive rate charges a certain price if less than a fixed amount is used, and if more is used, a lower price is made for the whole amount. Everyone realizes that "regressive" rates cannot be justified

E. Growth of the Use of Gas for Fuel and Manufacturing Purposes.

1. Gas originally intended for Lighting only.

When gas was first introduced, it was meant to be used for lighting only.[a] For many years, in fact until the introduction of water gas in the 80's, prices were so high as to make its use

a. Article I, of the charter of the Duluth Gas Light Co. (1870), names as the purpose of the corporation, the "Sale of Gas, for Illuminating purposes in the town of Duluth". Records of the Sect'y. of State of Minnesota, Vol. B. p 309. The Stillwater Company was formed (Art. 1) to sell "Gas for Illuminating purposes" (1874) Ibid Vol. C. p 75. The Red Wing Company (1872) and the Minneapolis Company (1870) were formed (Article one of both charters) for "lighting the city, and the houses, and the buildings therein with gas"- Ibid Vol. B 544. Most of these charters were amended later to make the purpose broader Thus in 1887 the Stillwater Gas Light Company, amended Article 1 to read "for heating, illuminating and other purposes.....".

prohibitive, for any purpose but illumination, and even a luxury for that. It was not until late in the 80's and in the 90's that the gas companies really began to appreciate the opportunities of selling gas for cooking or manufacturing. As late as 1890 the Massachusetts Gas Commission remarked, "The number of gas stoves in use, remains with most companies very small. If the companies were to aid the consumers, either by a reduction in the price of day gas or by furnishing stoves at a rental or selling them at cost, it is probable that much could be done towards increasing the output of day gas, especially in the summer.

"An increased output of gas in the summer ..... would tend to reduce the cost of production per thousand cubic feet."(a)

2. Extension of the list of gas for other Purposes.

The truth of their prophecy has been proved in every gas plant in the county. The wonder is that it took a board of commissioners to discover this fact, rather than the gas men themselves.(b.

a. Report of the Board of Gas and Electric Commissioners of Massachusetts. 1890 p. 50.
b. This throws an interesting sidelight on the contention that private, unregulated industry always knows what will most effectively promote its own interests.

The year this statement was made there were only 6430 stoves reported in use[a] in Massachusetts. Ten years later there were about 90,000, and in 1912, exclusive of Boston, 250,000 people were using gas stoves in Massachusetts.[b] It is clear that here there has been a most remarkable development of the use of gas for cooking.

It was estimated in 1897, that during the preceding ten years the total output of gas sold in the U.S. had increased 259%. During this time however, night sales, (primarily for lighting), increased only 213%, wheras day sales, (for cooking or industrial purposes), jumped up 621%.[c] In 1887 gas sold for other purposes than lighting, formed only 11% of the total. In 1897 it formed 22% of the total output.[d] Douglas Knoop in his book on Municipal Trading gives a few European cases which illustrate clearly the trend in Germany.[e] In Cologne, the gas sold to private consumers for lighting during the ten years 1898 to 1908 increased 34% while for heating and cooking purposes, the sales increased 289%. From 1885 to 1908 in Mayence, the increase of

a. 1890 report- Above cited p. 51.
b. Report for 1912, p 245a - 246a. Boston is omitted because it is impossible to ascertain the number, which, however must be large.
c. Address of C. W. Bladgett before the 21st Annual Meeting of the Western Gas Association, in 1898. Reported in the American Gas Light Journal Vol. 68 p. 898.
d. Ibid.
e. Douglas Knoop: Municipal Trading pp 206-7.

gas sold for lighting purposes was 91%, while that sold for cooking and heat increased 1221%.[a] This development has been world wide.

3. Gas for cooking in Minnesota.

In Minnesota the use of the gas stove began to be important about the same time as in Massachusetts.

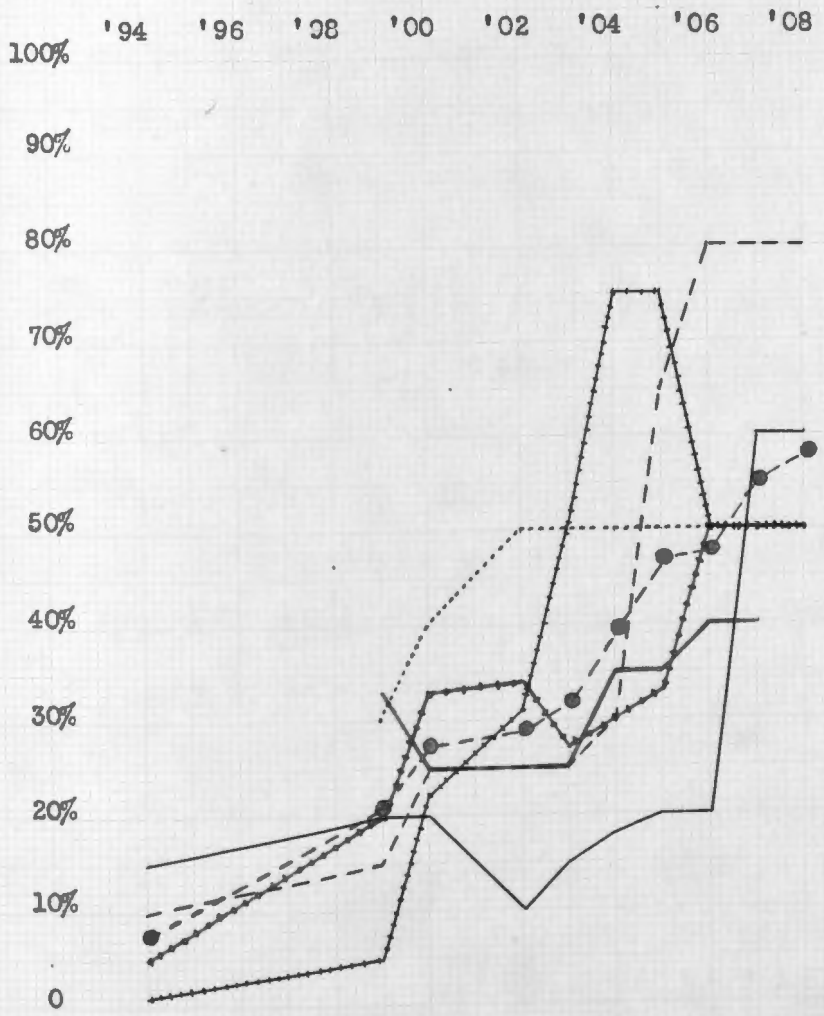
a. In Cologne the figures are as follows.

	Cbm of gas sold for lighting.	Cbm of gas sold for cooking and heating
1898-9	14,322,197	3,703, 560
1903-4	17, 102,222	8,544, 903
1908-9	19,353, 016	14,466,845

Knoop quoted these statistics from Geschäftsberichte der Gas, Elektizitats - und Wasserwerke der Städt Cöln für die Jahre 1907- 1908, 1908 - 1909.)
In Mayence in 1855 gas used for lighting amounted to approximately 1,536,000 cbm, and that for heating and cooking to 301,000 cbm. In 1908 the respective amounts were 2,914,000 cbm and 3,977,000 cbm. (These figures were secured from Rechenschaftsbericht der städtischen Gaswerke zu Mainz für das Rechnurigsjahr 1908,p. 46.)

DIAGRAM "D".

Illustrating the Increased Proportion of Gas Used for Fuel in Various Cities in Minnesota, During the Years 1894 to 1908.



Key:-

Duluth
Winona
St. Paul
Red Wing
Mankato
Rochester
Average

In 1886, the Winona Gas Light Company made a reduction of 50¢ for gas to be used in stoves.[a] The Minneapolis Gas Light Company made a special cooking rate in 1887.[b] Red Wing, Duluth, St. Paul and Mankato all followed in the early 90's.[c] During the ten years following, the importance of gas for fuel increased tremendously. Diagram number "D," illustrates the general tendency[d] in six cities. In 1884, when the reports first appear Winona sold the highest proportion of gas for cooking, 15%. The average percentage in that year was 7.7[e] By 1900 the average had gone up to nearly 28%- just four times the figure of 1894. From 1900 to 1907 the importance of cooking gas increased steadily and in 1907, St. Paul, with 40% appeared to sell the smallest proportion for fuel. About this time the difference between rates for fuel and for illumination began to disappear- so reports of the relative amounts of gas used for each purpose are no longer available. The importance of gas for cooking has not diminished, however. The increase of 500 consumers in Winona last year, for instance, was the direct result of a successful campaign by the company

a. Brown's Directory 1887 pp 83-91
b. Ibid
c. Ibid Volumes for 1890- 1895
d. The diagram and the statistics relating to this matter were taken from Brown's Directories from 1894 on.
e. This is an average of the percentages in these five cities, not an average showing what proportion of all the gas used for cooking.

to secure new gas consumers by selling them stoves at favorable prices.[a]

4. Importance of gas in manufacturing.

Since 1900 gas for manufacturing purposes has stedily become more important. "Artificial gas is being supplied in increased amounts for melting, tempering, metal finishing, drying, gas engines and hundreds of other industrial uses. Inventors are actually at work designing apparatus which will greatly increase this use. Heat storage furnaces for heating buildings economically with gas are proposed. Indeed it seems to be true that it only needs the design of proper gas-using apparatus to make gas the most economic means of transporting the heat content of coal."[b] No more striking instance of the increasing importance of gas for industrial purposes can be found than that of the Ford Motor Company, previously mentioned, which has contracted to purchase from 2,000,000 to 4,000,000 cubic feet of gas a day.

While there is nothing in Minnesota, or elsewhere to compare with this, our state is following the general trend somewhat more slowly. The use of industrial gas in

a. Roger W. Babson, pointed out recently in the Saturday Evening post, tha the utilization of the fireless cooker has helped widen the use of gas- for the plate which is warmed for the cooker can be heated more quickly and economically on a gas stove than on any other.

b. Report of the Joint Committee on Colorimetry, (1913) to the Second District Public Service Commission of N. Y. p. 7.

Minneapolis has partially recouped the Gas Light Co. for its loss of the major portion of the hotels' lighting service.[a] The introduction of gas engines as an important factor has come only with in the last decade. In Massachusetts the Gas Commissioners have reported the number of gas stoves in use every year. They started giving a record of the engines in use too. In 1890 we find that there were 48. But soon they were dropped from the report and not until 1910 were they deemed of enough importance to be included again. In Minneapolis and St. Paul any important development of the use of gas engines has been restricted by the demands of the cities for a horizontal rate scale. If the two companies in question had been permitted to sell gas in large quantities at reduced rates, they undoubtedly could have secured some new profitable customers. Even in Duluth , however, where a lower rate is made to manufacturers, we have already found that the still lower rates for electricity has checked the use of gas for industrial purposes.

a. Statement made by Sec. W.H. Leavings of the Minneapolis Gas Light Co.

5. Cheap Hydroelectricity in Minnesota and its Effect on the Consumption of Gas.

In fact it would appear that water power developments in Minnesota would continue to serve as a check against any striking extension of the use of gas for industrial purposes. In Pennsylvania and other coal mining districts large coke ovens can manufacture gas as a by product and pipe it long distances at a very small price.[a] Minnesota, however, has no coal mines. Duluth is the only city of importance where coal can be obtained by water. In Minneapolis the freight differential on both the coal and coke make coking establishments impracticable. It was thought a few years ago that the U. S. Steel Corporation would build an immense coking establishment at the head of the Lakes and pipe its surplus gas to the Twin Cities.[b] This plan has been figured on with great care, but the overhead costs would more than offset the cheaper prices in the holders at Duluth, which purchases gas from the Zenith Furnace Company, at $.37½ per M. cubic feet finds

a. See statements of H. M. Whitney and Joseph W. Weeks before the Committee on Manufactures , of the Massachusetts Legislature, March 3 and 4, 1896. Reported as a supplement to the American Manufacturers and Iron world, March 20, 1896.

b. See ch. on Minneapolis Settlement p. .....

it cheaper to use electricity which it can buy from the Great Northern Power Company at from 3/8 to ½ cents per kilowatt hour.[a]

While Minnesota has no coal mines, it does own important water powers which make the generation of electricity economical. Power developments installed in this state today aggregate 188,000 horse power, while 120,000 more horse power still remain unused.[b] With this continuous, inexhaustible supply of energy available, it would appear to be the wise and economical policy, in the long run, to develop and use electricity, and thus help conserve this nation's coal supply. Thus it would appear that if electricity in competition with gas has had any effect in retarding the latter industry's growth, this result has been really a beneficial one, in the interests of conservation.

6. Competition between Gas and Electricity.

Competition between electricity and gas does not call for more than a very brief discussion, in view of previous references to the subject. Competition does

a. Letter from D. A. Reed, above cited.
b. Water resources of Minnesota (1911-1912) p 26. Investigation made by the U. S. Geological Survey in Cooperation with the State Drainage Commission. Results printed as a report of the State Drainage Commission.

not appear to have seriously harmed either of the two interests. We have already observed the phenomenal growth of the use of gas. The history of electricity has been no less marvelous. The gross income of the electric light and power companies grew from $1,858,789 in 1902 to $3, 478,009 in 1907.[a] The latest government figures from the last census have not yet been printed, (May 1914) but it is safe to conclude that since 1907 the business has enlarged more rapidly than before. This is indicated by the returns of the Minneapolis General Electric Company. In 1897 the gross receipts were about a quarter of a million dollars; in 1902 about half a million dollars;[b] in 1907, nearly one million; and for the year ending August 31, 1913. nearly two million dollars.[c] The company's business has doubled every five years. Progress and advancement seem to be the watchwords of both industries. It is also in point to add that in nearly half the cities where gas and electricity have grown up side by side, the two have been owned by the same company. Such is the case in St. Paul to a large extent, in Red Wing,

a. Special report of the U.S. Census on Central Electric Light and Power Stations 1907. p 126.
b. Stone and Webster: Public Service Journal Vol. 6 p.92.
a. $1,931,651, From the annual report of the Consumers power Co.

Mankato, Stillwater, Fairbault, Northfield, St. Cloud Owatonna and Albert Lea.[a] In view of all the facts available it appears to be a fair conclusion, that electricity has hindered the development of gas companies but little, and that little to the real benefit of the state and Nation.

a. See Moody's Manual of Corporations, 1913; or Poor's Manual of public utilities, 1913.

Chapter III

FINANCIAL ASPECTS OF THE GAS INDUSTRY

A. In Large Cities.

1. Modest Beginnings.

Gas companies in Minnesota generally were given their first impetus by local capital. There have been few exceptions in these later years, but all the older companies were incorporated by men in the cities interested. Such was the case in Minneapolis, St. Paul, Winona, Duluth, Stillwater, Red Wing, Rochester, Fairbault, and other cities. Not only were they started by local capital, but they began on a very modest scale. The St. Paul Gas Light Co., in 1857 was authorized to issue $200,000, capital stock. The Minneapolis Gas Light Co., was incorporated with $100,000, authorized capital stock, and $15,000 authorized indebtedness. All of early authorized security issues were small.

2. Expansion.

Soon, however, capitalization began to increase. In 1881, after 11 years of existence the authorized capital of the stock of the Minneapolis Gas Light Co., was increased from $100,000 to $800,000, where it has since remained. The same year its debt limit was raised from $15,000 to $75,000. In 1892 the authorized indebtedness was increased to $3,250,000, and the last increase in the authorized indebtedness came in 1903 when the limit was set at $10,500,000.[a] The outstanding bonded indebtedness has been increasing regularly. In 1900, it stood at $2, 900,000; five years later it was $3,942, 000; ten years later it was $5.490,000. and today (1914) it is $6,318,000.[b] During the last ten years the bonded indebtedness has just doubled wheras the capital stock has remained stationary for 30 years.

In St. Paul the company, has had a much larger capital stock and a correspondingly smaller bonded debt. On Jan. 1, 1896 there were outstanding $1,500,000 stock and $3,650,000 bonds all 6's.[c] Of these there were $650,000 1st mortgage, $600,000. Extension bonds, $2,400,000, general mortgage bonds. By 1900 the

a. These changes are taken from the records on file with the Secty of State of Minnesota.
b. From the annual reprts in Brown's Directory of the Americaan Gas Cos.
c. American Gas Light Journal Vol. 64 p. 96.

general mortgage bonds amounting then to $2,460,000, had been converted into[a] 5% security instead of 6%. The first mortgage and the extension or consolidated bonds have remained the same till at present, but the general mortgage 5's have already been increasing till in 1913 there were outstanding $3,750,000 of them.[b] The capital stock has gone up regularly too, and its figures today, 1914 are $2, 500,000. The entire security issue amounts to $7,500,000. While this is an excess of the capitalization of the Minneapolis Company, it is on a rather more conservative and sounder basis, since only $5,000,000 of it requires a fixed return. The interest or fixed charges of the Minneapolis Company amount to about $90,000, a year more than that of the St. Paul Gas Light Company.

3. The Minneapolis Gas Light Company.

In fact it would appear that the practise of the Minneapolis Gas Light Company in raising all of the funds in recent years by bond issues, has not been the very soundest financial policy it could have pursued.

a
a. Brown's Directory 1900.
b. Moody's Manual of Corporations 1913. Vol. 2.p.3022.

Only about 11% of the total capitalization is stock, The balance 89% is bonds. This proportion is rather extreme. W. H. Lough in his"Corporation Finance" suggests that the most sound business corporations borrow from 50 to 75% of their funds.[a] Of course in Minneapolis the explanation is perfectly simple. The Company's income seemed to be perfectly stable, increasing year by year and unaffected by adverse business conditions. By securing the bulk of its capital at a relatively low rate, it has been able to return a large dividend on its capital stock.

For years it has had in the neighborhood of $300,000 a year for surplus or dividends, on $800,000 worth of stock.[b] In June 1911 the Company declared a dividend of 40% out of its surplus.[c] It is said that another dividend of 31% was declared in January,1912.[d] During the fiscal year ending December 1912 the gross earnings of the Co., were $2,066,939. After operating expenses and taxes had been paid, (1,440,206) and interest on bonds ($306,303) there was still left for sinking funds and dividends $332,173.[e] When we bear in mind that half

a. pp 96-102. See also E. S. Mead's critisism of the U. S. Steel Company's bond conversion in Ripley: trusts, pools and corporations. p. 172 ff.
b. Communication of Mayor J. C. Haynes, Mpls Council Proceedings 1910. p. 37.
c. D. F. Wilcox. *Confidential Report to the Nat'l Civic Federation* 1913
d. Ibid.
e. Moody's Manual, 1913, Vol. 2.p 3328.

the stock is held by four Minneapolis people and the balance by the United Gas Improvement Co of Philadelphia,[a] it is evident that the owners have been drawing a very liberal dividend.

This however, has placed the company in a serious position. It probably did not consider the possibility of having to submit to the heavy burdens, which the City has now placed upon it. In 1911 the company's claimed assets were about $1,000,000, greater than its security issued, or something over $8,000,000. But the late W.D. Marks, the expert hired by the City, in 1913 valued the company's property at $4,318,179, and the City enacted an ordinance placing the price of gas at 70¢ which was calculated to return a fair profit on Mark's valuation. This rate has since been abandoned by agreement,[b] but had it been sustained, the reduction involved might have endangered the fixed interest charges of the company. If we should estimate that the gross earnings would have fallen off in the same proportion as the price was lowered, (17%),[c] this

a. D. F. Wilcox.
b. See above pp. 66...
c. As a matter of fact, however, every one believes that lower prices mean greater consumption. See particularly Wilcox vs. Consolidated Gas Co. 212 U.S. 19, 51 for the view of the United States Supreme Court.

would have meant a gross decrease of $350,000. in the yearly earnings. Since the total amount for sinking fund and dividends in 1912 was only $306,303 it is clear to see why the company feared to permit the $.70 rate to become permanent. In the settlement which the city attorney made with the company, it is clear that the effects of the price on the bond market were of some influence. It seems clear that there should have been a better balance between stocks and bonds issues, so that the fixed charges would not be so large.

B. Holding Companies in Minnesota.

In the smaller cities we find also the same general growth of capitali^{z}ation, roughly corresponding to the increase in business transacted. Before considering these sities however, we must understand a little more of the ownership of companies operating therin. It has already been stated that the United Gas Improvement Co., owns half the stock of the Minneapolis Gas Light Co. Similarly almost all of the private gas plants in Minnesota are owned by great holding companies. All of the St. Paul Gas Light Company's stock is held by the American Light & Traction Co., of New Jersey.[a] The American Public Utilities Co, a Delaware holding company, owns th the majority of the stock in the Winona Gas Light & Coke Co., and in the Red Wing Gas Light Power Co.,[b] The Consumer's Power Co. at Stillwater, Faribault, Mankato, and Northfield and the Union Light Heat & Power Company, which supplies Moorehead, are owned by the Northern States Power Company, which in turn is owned by the Standard Gas & Electric Co.[c] This great holding Co., of the H. M.

a. Moody's Manual, 1913. Vol. 2-p 3022. The American L. & T. Co., owns about 10 other large companies in the U. S.
b. Moody 1913. Vol. 1.p. 1728. This company was incorporated in 1912 to hold the stock of the various interests owned or managed by the Kelsey Brewer Interests of Grand Rapids.
c. Company's properties.

Byllesbye & Co., interests, controlling gas and electric properties in various places over the entire U. S. is perhaps the most harmful and extensive corporation in the public utility field now operating in Minnesota.[a] The Rochester Light Heat and Power Co., is affiliated with Sonntog Decker & Co., of Chicago.[b] The companies at Albert Lea and Austin are also largely controlled by eastern capitalists. It is clear that gas corporations in Minnesota are really only subsidiary parts of larger utility corporations. Outside of Minneapolis and St. Paul, this is all a relatively recent development. Emerson McMillin, now head of the American Light & Traction Company, acquired control of the St. Paul Gas Light Company in 1895. The day when the U. G. I. of Philadelphia extended its sphere of influence to Minneapolis is not known. The Consumers Power Co., did not secure its gas plants till 1909, and after. The re organizations in Winona and Red Wing occurred in 1905 and 1906.

a. It is mote important in the electrical world, in Minneaota than in gas; controlling the electric supply in nearly 40 towns and cities in the state.
b. Moody 1913. Vol. 2. p. 3480.

C. Reorganizations of Gas Companies.

1. Red Wing.

Under these reorganizations some unusual financial operations were performed. This is especially true in Red Wing and Winona. The Red Wing Gas Light Company commenced operations in 1872 with an authorized indebtedness of $5000.[a] In 1888 the Company was reorganized as the Red Wing Gas & Electric Co1, consolidating the gas and electric interests of the city. Its capital stock was placed at $100,000 and its debt limit $25,000.[b] Only $65,000 of stock was ever issued,this amount remaining outstanding till 1905. In 1896 the articles of incorporation were amended so as to permit an issue of bonds up to $50,000,[c] and again in 1902, up to $100,000.[d] Under these authorizations the actual amount of bonds outstanding had steadily, though slowly been increasing till we find that in 1905 $75,500, 5 % General Mortgage bonds were outstanding.[e]

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a. Secretary of State's Records, Vol. B. p 544.
b. Ibid Vol. V. p. 262.
c. Ibid Vol. P-2 p.502.
d. Ibid Vol C- 3 p. 156.
e. Mr. W. H. Putnam a director of the company in a letter March 21, 1914, says that at the time (1905) it "owed $100,000 in addition to its capital stock". Whether this $100,000 was all bonds or not, he does not say, and it is possible that the $24,500 in addition to the $75,500 as reported in Brown's Directory, may have been short time notes.

In that year the company declared a 4% dividend on its $65,000 capital stock and paid the interest on its bonds.[a]

According to Mr. Putnam the assets of the company at that time were actually worth $165,000, or equal to the company's total liabilities. The owners contemplated the expenditure of $35,000 to be raised by a new security issue. It was found that such a sale could be made only at a great sacrifice, and so the stockholders decided to sell their holdings to an outside syndicate. In December 1905 the new owners reorganized the company and called it the Red Wing Gas, Light & Power Co.,[b] They proceeded according to the modern system of financing, of issuing bonds to the full value of the plant and slapping on an equal amount of stock, and sold $200,000 of 5% bonds, issuing in addition $250,000 of stock. Shortly afterwards the bonded debt was raised to the same amount $250,000, as the capital stock. Fifty per cent of the securities are pure water.

The bonded debt alone of the new company was

a. Secretary of State's Records Vol L-3 p 15.
b. Brown's Directory for 1905.

made 35% higher than the total security issue of the old corporation and the fixed interest charges wer 56% higher than the total amount of dividends and interest paid the year before. Still the company has earned the interest on the bonds, and very likely something more than this.[a] Such a method of financing as this proceeds not on the theory that the company is a public service corporation, entitled only to a " reasonable profit on the fair value of property," but it follows rather the method of competitive, speculative private companys, who capitalize prospective earnings and seek to hide their real earning capacity under excessive stock watering. This security inflation, no doubt, may explain in part, the rather high prices charged for gas in Red Wing.

2. Winona.

Almost identically the same development occurs in Winona. The original Winona Gas Light Co., was incorporated with $60,000 stock and $20,000 debt was authorized.[b] In 1890 the authorized capital stock was

a. Letter of Mr. W. H. Putnam.
b. Secretary of State's Records. Vol. B. p.343.

raised to $100,000. Eight years later capital was issued to the full authorized amount and remained at that figure ($100,000) till the reorganization in 1905. Curiously enough there appears to have been no bonds issued.[a] In 1905 the Company was incorporated as the Winona Gas Light & Coke Co., The Kelsey Brewer interests now own both the Winona and Red Wing properties and it is likely that in both cases the Kelsey Brewer interests were a part of the reorganizing syndicate. The very first year the new company issued bonds amounting to $230,000, altho the capital stock $100,000 was unchanged.[b] But the next year it issued $200,000 more of stock and since 1909 the outstanding securities have been as follows: $50,000 6% preferred stock; $300,000 common stock; and $285,000 First Sinking Fund Gold 5% Bonds.[c]

A portion of the proceeds of the bond issue was used for improvements and extensions.[d] But it is also probably true that a large part of these proceeds was used to purchase the stock of the old company, and that the new stock was all water issued according to the

a. Moody's Manual, 1906. p. 1499.
b. See Brown's Directories, or Moody's Manual of Corporations for 1905, 1906 and 1907.
c. Moody's Manual of Corporations 1913.
d. Just what amount is not known.

same "Modern Method" which was used in Red Wing. The outstanding securities today amount to 635% of these of 1905, although the volume of business transacted in 1913 was barely double that of 1905.[a] The security issues have increased five times as fast as the volume of the business. It is clear that the method employed by the owners was to capitalize the anticipated earnings.[b]

3. Stillwater.

Two companies have experienced bankruptcy, in one case clearly, and in the other in all probability the result of "frenzied finance" of outside speculators. These are the Stillwater Gas & Electric Co., and the Rochester Gas Co.

a. The old Stillwater Gas & Electric Company.

The former of these two had been incorporated in 1890,[c] to succeed the old Stillwater Gas Light Co., which had operated since 1874. This gas and Electric Company supplied Stillwater with gas and electricity and did a profitable and conservative business. For some time the capital stock outstanding was

a. 35,000,000 cu. ft. sold in 1905, 65,000,000 in 1913. Brown's Directory for 1906. the returns to the Municipal Reference Bureau.
b. This point is made clear by a circular of the company issued in 1906 in connection with the projected sale of bonds. Gross earnings for the years 1902 to 1906 were stated as being $36,000, $42,000, $43,000, $45,000 and $48,000. Then it stated that $67,000 gross earnings were expected the next year.
c. Records of Sect. of State. Vol.Z. 2. p. 492.

$60,000, and the bonded debt $30,000.[a] On this the company had paid as high as 20% in some years and in ten years the stockholders were more than paid back what they originally put into the corporation.[b] It is probable that the owners in their conservatism let the plant run down during the late 90's and early 1900's. One of the local newspapers in 1903 commented editorially on the fact that for many years the company had not been equipped , to light the city properly.[c] Mr. Hospes says that during this later period the company had not been a paying proposition, and it was stated before the Stillwater council in January, 1903 that the company's stock had fallen below par because no dividends were being paid.[d] At least the management, under local authorities, had been honest, though perhaps, not progressive enough to suit the community.

b. Appearance of the Western Gas & Investments Company.

This overconservatism led the people of Stillwater to welcome the prospect of new management when the Western Gas & Investments people appeared on the scene late

a. Brown's Directories.
b. This information was furnished by E. L. Hospes, for many years President of the old company and receiver of the new company when it failed in 1907. Much of the discussion to follow is based on facts which Mr. Hospes kindly furnished.
c. Stillwater Weekly Gazette-May 27, 1903.
d. Ibid- January 28, 1903.

in 1902.

This was a loosely organized holding company, incorporated January 1, 1902[a] under the lax laws of South Dakota, by certain financiers, speculators and engineers from Chicago. It made a business of acquiring lighting properties, and at its height about 1906 owned ten lighting and power companies, principally in Indiana, Ohio and Minnesota.[b] In the fall of 1902, through Colonel C. W. Bronson, overtures were made to the stockholders of the Stillwater Gas & Electric Co., to purchase their stock and by 1903, Bronson had secured option on practically all of the out standing stock. The options called for payment of 50% of the par value, which was a good price considering the condition of the plant and the earnings for the few years preceeding. The promoters wished to obtain a new franchise to replace the one which should expire in 1914, and in January an ordinance was introduced into the common council, which provided for a new 20 year franchise, substantially like the existing

a. Commercial and Financial Chronicle. Vol. 84.p.752. March 30, 1907.
b. Moody's Manual- 1910 p. 2344.

one in restrictions and privileges. This was presented by Colonel Bronson who said that the new company wanted that added privilege before it came in and made the improvements which it contemplated.[a] In April this ordinance was unanimously passed[b] and shortly afterwards a 30 year non restrictive electricity franchise also was granted.[c] Then the next month the Western Gas & Investments Company exercised its options and took possession of the stock.

The stock holders had appointed Mr. Hospes a committee to take charge of the stock with restrictions not to turn it over till it was paid for. The Chicago promoters, however, did not plan to invest any of their own funds in such purchase, but purposed to issue bonds and from the receipts of their sale to pay the original stockholders. But before they could do this they had to obtain part of the stock and they finally induced Mr. Hospes to let them have a part of it. When they secured this they used it as collateral for a loan with which they financed their bond sale and paid in part the stockholders.

a. Stillwater Weekly Gazette. Jan. 28, 1903.
b. Ibid. April 15, 1903.
c. Stillwater Messenger. May 2, 1903.

c. Financial Juggling.

While negotiating with the Stillwater Gas & Electric Co., these Chicago financiers had discovered that to purchase the city property alone would be foolish. The same men who owned the gas and electric works owned a dam at Apple River and a site at Riverdale. By developing these they could generate and transmit electricity to Stillwater and the surrounding country much more cheaply than could the company with its steam plant in the city. So when Colonel Bronson was securing options on the Stillwater Gas & Electric Co., stock he was doing likewise with the stock of the Apple River Company. So a large part of the bond issue before mentioned had to go to pay for Apple River stock.

Moreover a new gas plant had to be built in Stillwater and a new dam at Riverdale, so every move the company made demanded new outlays of capital. Just how many bonds were sold, and what was done with the proceeds of their sale is difficult to

ascertain. When the company failed 4 years later, Mr. Hospes was appointed receiver and held that position for two years, and Mr. Hospes says it is almost impossible to follow all the company's moves, so complex and involved had they become.

They were simply trying, with apparent success to pull themselves up with their own bootstraps. They had gone in without a cent and had purchased the capital stock of two companys and had made plans to build a new gas works and power dam. According to the Commercial and Financial Chronicle for April 1, 1905 there were at that time $400,000 of bonds outstanding.[a] This however, is probably an error for later in the year Mac Donald, Mc Coy & Co., were offering the unsold portion of $344,000 first mortgage 5% bonds, covering the interests both in Stillwater and Apple River.[b]

Everything the company did was done in a careless and reckless manner. For instance when Mr. Hospes resurveyed the Riverdale site in 1907-1909, he found that the company had been excavating entirely off its own property, and in certain places where a rail road

a. Vol. 80 p. 1738.
b. Commercial and Financial Chronicle Vol. 81. p 1379. Nov. 4, 1905.

company had a right of way. Italians were imported from Chicago and soon funds ran out and then the laborers went on a strike. When the promoters had been asked what they would do when they ran out of funds, they cheerfully replied, "Buy more plants and bond them."

d. Receivership.

Such recklessness could have but one result. On May 29, 1907, Mr. Hospes was appointed receiver by Judge Lockren of the U. S. district court.[a] During the first half of the same year receivers were appointed for most of the other properties of the Western Gas & Investment Co., It was clearly a case of dishonest management. The Seymour (Ind) Gas & Electric Co., had been purchased in 1908 for $55,000 by these same people who expended $22,000 for improvements and then bonded it for $110,000. In Febuary, 1907, when the company failed, appraisers appointed by the court, valued the property at $30,000.[b] Mr. Hospes states that the Stillwater situation, while it does not look as bad, as the Seymour case was fully as bad.

a. Ibid Vol 84. p. 1372, June 8, 1907.
b. Commercial and Financial Chronicle. Vol. 84.p. 752.

Eventually the property was sold to H. M. Byllesbye & Co., for a good price and all the regular bond holders received their money. There was one bond issue of approximatley $150,000, in addition to the $340,000 or $350,000 first issue, which Mr. Hospes did not regard as a legitimate issue. He was upheld by the courts in his position and the owners were not recompensed. He states,however, that but very few of these bonds had been sold, most of them still remaining in possession of the promoters. Thus the Western Gas & Investments Co., came to the inglorious end of a wholly inglorious career.

4. Rochester.

In Rochester, the writer has not been able to secure the details,except that the local company was purchased early in 1903,[a] and failed in 1907, both dates nearly the same as those for the corresponding events in Stillwater. Considering all things it is probably safe to say that substantially similar causes produced the failure at Rochester as at Stillwater and elsewhere.

a. Rochester Post and Record. Jan. 1903. p.7.

Since the Sonntag Decker people bought in at Rochester, and Mr. J. H. Sonntag has personally taken charge, there has been a big improvement in the financial standing of the company. In the year ending September 30, 1909, just after the new owners had secured control, the gross receipts of the company amounted to $17, 235.[a] The financial report[b] of the Rochester Light, Heat and Power Co., for the year ending Dec. 31, 1913, shows the gas earnings to be $35,089.45 and the total receipts, including sale of coke and tar, $54,324, .82, This means 200% increase in four years, a truly creditable showing. The total net earnings of over $8,000. (equivalent to 4% on the outstanding capital stock of $200,000) were all put back into the business. The management appears to be making a sincere endeavor to put the business on a sound financial footing.

a. Commercial and Financial Chronicle. Vol. 90.p 240.
b. Kindly furnished by J. H. Sonntog. (a) Jan. 22,1910.

D. Conclusions Drawn from Experience in Minnesota.

1. Failure of companies to observe the "public servant ideas."

A few general conclusions may be drawn concerning the financial management of companies in Minnesota. In the first place gas companies (and other public utilities) have not been operated under the theory that they are businesses "affected with a public interest."

A public service corporation is supposed to supply its services to a community at a price which will afford a reasonable return on a fair value of the property. The managers of Minnesota gas companies have not followed this theory as a guide to their management. It may be that most of the companies have only made a "reasonable" profit but this has been due to the impossibility of earning more, rather than to any observance of the general theory. The reorganization - above mentioned- were clearly based on the theory that the companies were entitled to earn all they could get.

2. Improper capitalization.

A second conclusion is inevitable. Capitalization has been either excessive, or unsound in most cases. We have found in many cases that bonds have been issued to the full value (and probably in excess at times) of the actual property of the corporations. The fixed charges of many companies are far too great. "Modern methods" of financing have led to excessive watering of stock. All this is not consonant with the general theory of a "public service corporation", and is the result of a disregard, by the companies, of this theory.

3. The Holding Company Problem.

(a) Advantage of the Holding Company.

A third conclusion is that there has been a marked tendency to centralize and consolidate the control or ownership of these companies. This movement, like the other characteristics just noted is not confined to this state alone but is only a part of the general trend of public utility corporations throughout the country.

Local utilities in gas, which are not owned by large holding companies, are rare in Minnesota, as elsewhere. There are certain economic advantages of such combination which are valuable. Large contracts for coal, oil, and other supplies are thus made possible, and should result in lessening the cost of production. Likewise the combination of interests means for each unit the services of the best legal, engineering, advertising, and accounting experts. These factors tend to improve the efficiency and reduce the costs of production of gas and other public utilities. When the public can share in these improvements, they should be encouraged. But if the corporations take all the gains the public would hardly be justified in approving such policies. Increased efficiency and lower costs of production should reward the originators, but at the same time should benefit the public as well, and particularly in public service corporations.

(b) Dangers of the Holding Company.

There is one disadvantage of the holding company to the public.

Such ownership regards each plant solely as an earning unit, for upon the earnings of the subsidiary corporations, do the dividends of the holding company depend. This fact and the common practice of "absentee ownership" lead the men in control to force upon the local companies, policies which are inimical to the best interests of the locality affected. Moreover, when such a conflict of interests exists, the holding company with its vast resources, and countless experts is in a position to combat with overly great vigor the real public interest of a particular locality.[a]

The holding company creates many involved problems. One is the relation between bond companies, supply companies, construction companies, and operating companies, when all are owned by the same general holding companies. It needs no elaborate explanation to see how a bond company could receive excessive commissions, or a supply company unduly high prices for oil or coal, or how a construction company could ask

a. The most conspicuous example of this recently is the Des Moines Gas Case 199 Fed. 205, where the United Gas Improvement Co. of Philadelphia spent $150,000, defending its local subsidiary, and had many of the greatest national experts on its payroll.

and receive exhorbitant engineering fees. The expenses of the operating company would thereby be rendered very high, and it might claim that as a result its rates must also be high. But if all the companies involved were owned by the same men, it is apparent the excessive charges were but a device to conceal the actual costs of operation.

The Massachusetts Board of Gas and Electric Commissioners uncovered a[a] case in 1911 at North Adams which well illustrates the possibilities of this holding company situation. Practically all the stock of the North Adams Gas Light Company was owned by the Massachusetts Lighting Companies, a voluntary association- owning 16 other public utilities. This voluntary association also owned the Light, Heat, and Power Corporation, which was organized for the purpose of "manufacturing, selling and purchasing machinery and appliances; building, equipping, leasing and selling water, light, power and heat plants and pipe lines; and furnishing machinery and appliances to be used in connection therewith, and maintaining and operating

a. 27th Annual Rep't of the Mass. Board of Gas and Electric Commissioners for year (1911) pp 17-24

such plants." The officers of this company were exactly the same as those of the North Adams Gas Light Co., which purchased its supplies, and has all of its construction work done by the Light, Heat and Power Corporation. It was found that on these supplies and construction operations, the Light, Heat and Power Company made a " substantial profit." " Of the total expenditures of the North Adams Company for all purposes" reads the report, " Amounting during the fiscal year ending June 30 to about $318,000, something more than $240,000 was paid to the Light, Heat and Power Corporation for current supplies and new construction work; and of this, nearly $27,000 represented commissions to the latter corporation, or advances over the amounts actually expended by it for the same work and material. Of the amounts named as commissions, about $8,000 were on account of current supplies and the remainder for additions to the plant.

It was further learned that another reason

operating expenses were so very high was because the officers (the same men in both companies) were receiving large salaries from both companies . Every month,moreover, the Light, Heat and Power Corporation presented its bill to the North Adams Company and vertually kept it in debt all the time. Then the former company was allowed to charge interest on the balance due it, thus adding the final touch to the process of transferring profits from the one company to the other.

As the Commission well says, "The whole arrangement tends to mislead the public as to the actual reasonable cost of carrying on the North Adams Co, and so is directly contrary to the spirit and purpose of the law providing for the regulation and supervision of such concerns."

The extent of this practice no one knows- nor is it important for our discussion. If we understand how it works and what are its possibilities, we can see its dangers. No one can tell definitely whether such a practice is followed in Minnesota or not. Not until

we have some supervising body with sufficient powers to make full investigations can we ascertain the facts. But this much is true. There is no law or strong public opinion or sufficient public knowledge to prevent such a practice in our own state. In many of the smaller cities, especially, there is no urgent temptation for such manipulation, because the earnings are not large, and because no restraints are placed upon them. But in the larger cities, where earnings are large, there naturally will be big temptations for the companies to conceal from the public their real earning capacity, by the methods described above.

CHAPTER IV

REGULATION IN MINNESOTA.

A. Primary Aspects of Regulation.

1. Source of the Power to Regulate.

The regulation which the public exercises over gas and similar public utility corporations is provided for and depends upon three important factors, First, the state statutes, and the constitution; second, provisions in the municipal charters relating to such corporations, and third, the franchises which these utilities receive from the cities. All of these, however, come back to the state law. Formerly street franchises were granted directly by the legislature, as was the case with the St. Paul Gas Light Co., and for many years the legislature regularly confirmed the franchises which were given by city councils. The city charters, too, were all originally legislative enactments, but in 1896 and 1898 the Minnesota Constitution was amended so as to permit cities to frame their own charters and retain to themselves larger powers of "home rule." [a]

a. Constitution of Minnesota. Art. 4 Section 36.

Yet even now, it is provided that all such charters must be "consistent with and subject to the laws of the state.," and it goes without saying that franchises must also conform to state legislation. As we have seen in the first chapter, the power to regulate is an inherent attribute of sovereignty. What rights the city may exercise, are only such as have been delegated to it, and even then unless this delegation is definite and explicit, the right to regulate,(particularly rates) remains a continuing power of the sovereign state.[a] So it becomes necessary for us to examine our state legislation.

The first law we find relating to gas companies was passed in 1870, when the common councils of cities were empowered to contract for the lighting of streets and public places. The same law also authorized the councils to permit the laying of gas mains in the streets and public highways. In all cases the city was to regulate the laying of the pipes, and to take proper precautions to prevent any interference with sewer pipes.[b] The St.Paul Gas Light Company's combined franchise and charter had been granted by the territorial legislature 14 years before this, but no other gas franchise was issued till

a. See Home Telephone Co. vs. Los Angeles 211 U.S. 265 and cases cited, and also Milwaukee Electric Ry. & Light Co. vs. The Wisconsin R.R.Commission 142 N.W. 491 (1913)

b. General Laws of Minn.1870 Ch.31, Subch. 19, Sec. 1-2

1870. Thus the early franchises were created by the cities under the authority of this law, which remained the only statute concerning municipal franchises till 1893.

At this time the state passed a law of great importance with reference to gas, electric and other public service corporations. In 1866 a law had been passed authorizing the incorporation of railroad, street railway, canal and other internal improvement companies, and had classed them separately from ordinary private corporations, thus starting in Minnesota the distinction of the public service corporation. The law of 1893, just mentioned, brought into the same category, all water, gas, electric, telephone and heating companies, and placed them under special supervisory powers of the state.[a] By this act, the state reserved the right to regulate and supervise the business methods of all corporations enumerated therein, and the power to fix rates which any of the companies were charging. The state has exercised this power in connection with the railroads only, but it still is a great power existing latent, which may yet be called into action. The law further provided that after the corporation had received its charter from the state, it must

a. Laws of 1893 Ch. 74, Sec. 1.

also secure from the municipality a franchise permitting it to occupy the streets of the city, and that the "corporations.....shall be subject to any condition from time to time imposed by such village or city." This important law has been enlarged on several occasions since 1893, but all the principles laid down are still on our statute books. The Later laws can best be considered in connection with the detailed features with which they are concerned.

2. By Whom Franchises May Be Granted.

a. Council ordinance succeeds Legislative enactments.

The earliest franchise, as we have already observed, was granted by the territorial legislature in 1856 to the St. Paul Gas Light Co. There is no other case on record in Minnesota of a gas franchise having been created directly by the legislature. Until relatively recent times the city council has been the body from whom the gas corporations sought its privileges. The law of 1870 (supra) delegated to the common council this power. The municipal charters, formed by special legislation, in the 60's, 70's, and 80's generally enumerated among the powers of the council, that, ".....to control the erection of gas works, or other works for lighting the streets, public

grounds and public buildings....." [a] This provision is worded somewhat differently from the general law of 1870 but grants substantially the same powers. The result is that most of our gas franchises are municipal ordinances. In Redwing, Stillwater, Mankato, Minneapolis, St. Paul, Winona, Albert Lea, Austin, Faribault, and a few other cities such is the case.

b. Restrictions on the Council.

In many of our cities the city council still has entire power to grant franchises. Such is the case in Mankato, Red Wing, Minneapolis, Winona, Faribault, Crookston, Bemidji, Ely, Worthington, and Ortonville. In the oldest of these charters, such as Minneapolis (1881) and Winona (1870) there are no limitations placed on the council. On the other hand in the later charters, such as Mankato 1911 or St. Paul (as finally amended in 1912) and Duluth, there are numerous restrictions. In Duluth a 4/5 vote and in Bemidji a unanimous vote of the council is required, [b] and the ordinance must be published at least once a week for two consecutive weeks. [c] This latter provision is also

a. This provision will be found in Ch.4, Sec. 3, Sub Sec. 11 of practically all of the original charters of the cities which have granted gas franchises. The charters are all alike in this respect.

b. Charter of Bemidji. Sec. 113, p. 33.

C. Charter of Bemidji. Sec. 115, p. 33.

a part of the Crookston charter.[a] In Faribault the franchise may not be voted on finally until 30 days from its introduction.[b] In Duluth the franchise must be published once a week for four weeks.

There are several charters which give the council authority to issue the franchises ordinarily, but in case the company desires it for more than a specified number of years, the question must be submitted to the voters. In Albert Lea this rule applies in case of applications for franchises of more than 35 years.[c] In Tracy,[d] Austin,[e] and Sleepy Eye,[f] popular election is required, if the application is for more than 25 years, in Rochester,[g] if the application is for more than 20 years, and then a 60% vote is required. In West St. Paul any franchise for more than 5 years[h] requires a popular vote. In Two Harbors[i] any exclusive or perpetual franchise requires popular vote.

Cannon Falls, Renville, and Glencoe, have a provision that, "whenever there are two or more applicants for the same franchise, if the council determines to grant the same, it shall be granted to such person or corporation as the city council in their judgment, deem for the best

a. Sec. 146 p.55 b. Faribault Charter Sec.106 p.26
c. Charter, Ch. 9 Sec.1 d. Charter Ch. 5 Sec. 1
e. Charter, Ch. 10 Sec. 1
f. Charter, Ch. 7 Sec. 1
g. Charter, Ch. 16 Sec. 290
h. Charter, Ch. 4 Sec. 21
i. Charter, Ch. 7 Sec. 30

interests of the public: provided, that whenever an application is made for a franchise, upon the petition of 20% of the legal voters who are freeholders in said city a question of granting such franchise shall be submitted to a vote of the legal voters of said city at any general or special election." [a]

c. Direct Popular Control.

Several cities require that all franchises shall be submitted directly to the people. Such is the case in St. Cloud,[b] Montivedeo,[c] Detroit,[d] Granite Falls,[e] Moorhead,[f] Staples,[g] and since 1913, in St. Paul.[h] There is an interesting proviso in the St. Paul charter to the effect that the council may by a 4/7 vote of all members, grant a temporary license for one year to a public service corporation. This license may be renewed by a 5/7 vote of the council; two consecutive times if the gross receipts of the company exceed $10,000 a year and an indefinate number of times if the gross receipts are less than $10,000 yearly. The gas franchises of Moorhead and Northfield have been approved by the voters

a. Ch. 6 Sec. 7 in the charter of each of the three cities.
b. Charter Ch. 6 Sec. 75 c. Charter Ch. 9 Sec. 1
d. Charter Ch.14 Sec.214 e. Charter Ch. 6 Sec. 1
f. Charter Ch.14 Sec.223 g. Charter Ch.14 Sec. 210
h. Charter of St. Paul 1913 Ch. 10 Sec. 150 p. 38. Up to this time the council had the sole power to grant the franchise upon a 3/4 vote.

of those cities.

It would appear that the general tendency has been to bring the power of granting franchises closer to the people, through publicity, restricting the councils free dom to grant franchises, and in some cases by popular election.

3. Exclusive Franchises.

In the earlier days of the gas industry it was customary to grant exclusive franchises to the supplying com panies. The original franchises in St. Paul, Minneapolis, Red Wing, Faribault, Stillwater, Mankato, Winona, were exclusive and the Duluth franchise of 1883 was exclusive for 5 years. By the 90's however, there had come to be quite a general reaction against granting such privileges. This was no doubt the natural fruit of the exploitation carried on by monopolists in many American cities, which led the people to believe that competition should be left open to the public in case the monopolies became oppressive.

In 1899 the state legislature enacted a law that no

exclusive grant should be given by any city unless the matter had been submitted to popular vote. Nearly all the charters of today have gone further than this law and provide that this shall be no exclusive grant whatever. The franchises today in Winona, St. Paul, Northfield, and Moorhead are not exclusive. The older ones, still in force, are as a general rule, exclusive, as in Red Wing, Faribault, and Minneapolis.

4. Length of Franchises.

Minnesota has had little experience with perpetual franchises. Mankato in 1883 granted a gas franchise to Kanke & McCurdy, and in 1897 re-granted it to the Mankato Gas & Electric Co. This contains no time limit whatever, and is regarded by the present owners as a perpetual permit.[a] The city of Albert Lea also issued a perpetual franchise, but there appears to be exceptions to the general rule. Perpetual franchises were prohibeted by a statute in 1899 [b] and it is likely that this statute will not be removed from the books-- unless there is an unlooked for and marked change of public sentiment. Nearly every municipal charter in Minnesota contains the same provision.

a. It is the writer's opinion that this franchise would not be held perpetual by the courts, on the grounds that the city had no power to confer a perpetual privilege of this nature.

b. Ch. 351 Sec. 9

The Minneapolis gas franchise of 1870,[a] and those in Red Wing,[b] Faribault,[c] and Stillwater,[d] which were all largely verbatim copies of the Minneapolis ordinance, and adopted in the early 70's, ran for 40 years. In all of these there was a provision that if the city did not purchase at the expiration of the 40 years, the length should be renewed another 20 years. The Winona franchise, of 1870, apparently was for 25 years only, and its succeeding franchise of 1895 ran also for 25 years.[e] The old Duluth franchise was for 30 years.[f]

Franchises of today are generally issued for 20 or 25 years. Twenty-five years was set as a limit by a state law of 1903,[g] which still remains in force.[h] Several charters, created before the passage of this law permit franchises to run for 30 years. Such is the case in Ortonville,[i] while the Albert Lea contains a 35 year clause.[j] These, and other charter provisions like them

a. Charter and Ordinance of Minneapolis (1883) p. 124
b. Ordinances of Red Wing (1909) p. 43
c. Ordinances of Faribault (1900) p. 105
d. Ordinances of Stillwater p. 171
e. Ordinances of Winona (1897) p. 251
f. Ordinances of Duluth (1895) p. 390
g. Laws of Minnesota 1903 Ch. 238 Sec. 9. "In no case shall any franchise or privilege be granted or extended for a longer period than 25 years."
h. Revised Laws of Minnesota (1913) Sec. 1347.
i. City Charter, Ch. 8 Sec. 97 p. 60.
j. City Charter, Ch. 9 Sec. 9 p. 74.

have been over-ruled by the state law of 1903. Most of the city charters of today follow the state law, but several limit the duration to 20years.[a]

Of the franchises in force today, that in Minneapolis runs from 1912 for 20 years,[b] in St. Paul, 25 years, from 1907,[c] in Winona, 25 years from 1904,[d] in Stillwater for 30 years from 1903,[e] in Red Wing and Faribault, 20 years from 1912,[f] in Moorhead, for 10 years from 1912, and in Mankato and Albert Lea there is no definite time limit.[g]

5. Provisions for Municipalization.

a. Provisions in the older franchises.

Almost every franchise contains some clause empowering the city to purchase the plant and its franchise at certain definite periods, or at the expiration of the franchise. Several franchises go into considerable detail concerning the method of determining the sale price. The very earliest of these franchises, that in St. Paul.

a. St. Paul, Ely, Glencoe, Montivedeo, Cannon Falls, Renville and others.
b. Council Proceedings, Minneapolis 1910 p. 130.
c. Ordinances of St. Paul (1907) p. 568.
d. Ordinances of Winona (1908) p.114.
e. Financial & Commercial Chronicle, Vol. 80 p. 1138 April 29, '05.
f. Ordinances of Red Wing (1909) p. 43. Ordinance of Faribault 1900 p. 105. Copy of Northfield in writers possession.
g. Other franchises the writer has been unable to secure.

contained two interesting clauses of this nature. After the franchise had run for 20 years (from 1857), the city had the right to purchase the property of the St Paul Gas Light Co. The price was to be fixed by arbitrators, one or more to be chosen by the company, and an equal number by the city. "They shall take into consideration," reads the franchise, "the value of the gas works, and the lands, grounds, buildings, utensils, rights and interests, and everything thereunto pertaining; and if they shall agree their award shall be binding on the parties; but if they should not agree, then the said arbitrators shall elect some creditable disinterested person umpire between them, whose decision and award, in writing, reported to the parties above, shall be binding and conclusive, any law to the contrary notwithstanding."

"To the amount so agreed upon shall be added 7 percentum advanced on said valuation...."

If the city did not buy, the franchise was to run another 20 years, when the purchase privilege again could be exercised in the manner stated above, except that this time 5% instead of 7% was to be added to the findings of the arbitrators.[a]

a. Sections 10 and 11, of the St. Paul Gas Light Co's old franchise.

The franchises of Minneapolis, Faribault, Stillwater and Red Wing, had similar provisions. In every case it was agreed that at the expiration of 40 years the city was to have the right to purchase the gas works.[a] The terms were as follows: "The city may purchase the franchise pertaining to its territory and gas pipes, works, fixtures and other property pertaining to said business, at the actual value of the same, the value to be determined by three arbitrators." As was customary, these were to be chosen, one by the city, one by the company, and the third by the two already chosen. If the city should decline to purchase the gas works, the franchise was to be renewed for twenty years, "with the conditions hereinbefore in this ordinance stated."[b]

The franchises of Winona, Albert Lea, and Mankato, have no city-purchase clause. The Duluth franchise of 1883 stipulated that the city might purchase after 10 years had expired, and then again after any succeeding five year period. A section also provided for determining upon the price by appointing arbitrators, as in the other charters. The city actually did buy in 1898

a. Minneapolis Section 9; Stillwater, Section 6; Red Wing, and Faribault, Section 8.

b. Minneapolis, Section 10; Stillwater, Section 7; Red Wing and Faribault, Section 9.

after 15 years had elapsed, but the purchase price was arrived at by bargaining rather than by accepting the awards of arbitrators.

b. The law of 1893 and present day provisions.

In 1893 the state passed an important law relating to the city's right to purchase, a law still on the statute books.[a] In any case of franchise for any gas, electric, water, telephone, or street railway company, at the expiration of each and every five years from the time the franchise began, the city could purchase the plant. The city council was to make the purchase, but it had to be authorized by a 2/3 vote of the electors of the municipality. The acquisition and payment made to the company is to follow the regular eminent domain proceedings. Another act was passed in 1909,[b] for the benefit of Minneapolis. It authorized the purchase by this city of gas works under ordinary condemnation proceedings. Many of the municipal charters contain clauses similar to the general state law, namely that the city shall have the right to purchase every five years. The new St. Paul charter

a. Laws of Minnesota 1893. Ch. 74, Revised statutes of 1913, Ch. 58 Sec. 6138.

b. Session Laws of Minnesota 1909, Ch. 372.

stipulates that all franchises shall be granted subject to the condition that in case of condemnation proceedings brought by the city to acquire a public utility, the corporation involved shall not receive any return for the franchise, for good will, or for anything else other than the tangible property actually used in furnishing the service for which the franchise was granted, and also that the value of the real estate of the corporation, shall be the value it possessed when first used in the supplying the service in question.[a]

The present St. Paul gas franchise, like the one in Winona, contains no references to city purchase, but since both were granted after the state law had been passed, the cities undoubtedly could revoke the authority of the act in case they should desire to purchase. It really matters very little whether the franchise contains a purchase clause or not, because the state law provides that none of there public utilities may operate in Minnesota unless they are subject to the possibility of being purchased at any five year interval.

a. St Paul charter Ch. 10 Section 170.

6. Regulation of Mains Excavations, Etc.

The right to supervise the laying of mains, all excavations and interference with the streets has been vested in the municipalities in Minnesota from earliest times, by franchise, city charter and state laws. It is that primary aspect of the police power which is never questioned, and which is regularly exercised in Minnesota by the city, subject only to the requirement of reasonableness. In fact it is the control over the streets which has given legal rise to the franchise.[a] A gas company, electric company, street railway or other public utility must use the streets. To do so it must secure the city's permission. This permission is generally in the franchise form, covering other important factors, in addition to the use and regulation of the use of streets. A few cases will illustrate how the cities regulate their streets, and the way the idea of putting the city's powers into the franchise, grew.

The old territorial franchise of the St Paul company did not directly authorize the city to do any supervising yet the dity did actually exercise such power.

a. See also chapter 1 Sec. E

The law of 1870 [a] which authorized city councils to permit the laying of gas or water mains was very explicit in giving the cities the full authority to regulate and supervise the laying of these pipes and mains. The law is as follows:

"Sec. 1. The common council shall have authority to contract with any person, persons, or corporation, for the lighting of such streets or parts of streets and public places as they shall deem proper for the convenience and safety of the inhabitants.

"Sec. 2. The common council may permit the laying of gas pipes in any and all the streets, alleys, highways, and public grounds of the city, but in all cases the common council shall regulate the laying of the same, so that said gas pipes may not at any time interfere with the construction of common sewers or the lateral branches thereof, or with the proper and convenient location of water mains and pipes, and may at any time require the location of any gas pipe to be changed, if the same shall be found to interfere with the proper and convenient location of com-

a. General Laws of Minnesota 1870 Ch. 31

mon sewers or water mains or pipes."

The power thus granted is perfectly explicit and plenary. Similar affirmations of power may be found in all municipal charters. An examination of a few franchises shows that there, too, the cities have been careful to reserve this right to regulate the use of their streets by public utilities.

The original (1870) Minneapolis franchise gave the grantees and their successors, agents or heirs the right to enter the streets and public grounds and dig them up in order to lay the gas mains, providing, however, that this should be done with as little inconvenience to the public as possible and that the excavations should not interfere with water pipes, and that during the work, the company should take proper precautions to prevent accidents to people using the streets.

This same clause is embodied into the second section in the old Faribault, Red Wing, and Stillwater franchises, but all of them having been adopted a little later, go a bit further. They all provide that the pipes shall be laid below the grade of the street; that the streets shall

be left in as good condition as they were before the excavation; that the gas mains shall not "interfere with sewers and water courses of the city" and the Stillwater franchise provided that the company should be responsible for any damages or injuries to the city or to individuals, caused by the "construction, management or maintainance of the gas works.

The Winona franchise of 1895 states more explicitly the restrictions upon the company and added a final section which reads, "The city of Winona reserves the right to amend this ordinance at pleasure by making from time to time such rules and regulations regarding the manner of laying pipes in any public street, alley or ground in said city, the material to be employed,and the use of such street and public ground by such company, as the city council may deem to the best interest of the city." As far as this particular feature is concerned, the city's powers could not well be more inclusive, and later franchises contain but few additional provisions of this nature. It is now customary to require the company to receive a permit, either by council ordinance, or from the

city engineer before any new excavations may be made. The city regularly reserves the right to require the company to change the location of its mains, in case of the city expecting to replace or add new water or sewer pipes. The companies assume responsibility for any damages to individuals or property because or their excavation.[a]

The state law covering this power was changed and enlarged in 1893 and the one of that date will govern the situation. "Any corporation organized under this act (referring to "public utilities") shall be subject to any condition from time to time imposed by such city....."[b]

This power of regulation is a part of the state's, police power, relating primarily to public safety. It has been delegated to the cities by state law, and its exercise by the cities is not questioned. It is a right of much importance, too, in this day of underground electric and telephone conduits, extensive water, sewer and gas systems, all of them frequently subject to change and enlargment. The city's possession of the right to control all mains of every nature, no doubt prevents much confusion and costly litigation.

a. These provisions will be found in almost every franchise, and some of them in most charters, so I have not given specific references.

b. Laws of 1893. Ch. 74.

B. Control of Services and Rates.

1. Obligation to furnish services.

As we shall see presently, municipalities today generally have a large field of discretion in regulating the services of public utilities. Thus in gas we shall find that the candle power, the heating value, the pressure, the chemical constituents are all becoming subject to public supervision. The very first restraint imposed upon the companies was the requirement that they must serve all comers alike. Such a situation is taken for granted today, but as se have earlier pointed out courts frequently held in the 60's and 70's, that unless a company's franchide definitely contained such a stipulation the companies might supply whomsoever they pleased[a]. The St. Paul franchise of 1857 contains sevezal clauses which look towards an obligation on the company to serve all comers alike. Thus we read in section 15 this provise: "This act shall be void unless

a. New York C. and H. R. R. Co. vs. Metropolitan Gas Light Co. 63 N. Y. 326. 1875.
See also cases quoted in Chap. I, section C.

said company shall construct and lay at least one and a half miles of main pipe, and shall be ready to furnish gas and fixtures to the city and citizens of St. Paul so far as can be conveniently from said main pipe..... " a This clause safeguards to some extent, at least, public rights, and under them a court could hardly declare as it did in New Jersey or Connecticut [b] that the company could cut off any customers it might desire - even from malicious intent.

The Minneapolis franchise of 1870, and those based on it (supra) were more explicit. Thus the Minneapolis ordinance provided that the company should be "ready in all respects to furnish gas to those applying for it, ... to the extent to which... (they).... may have their pipes laid"; and the Stillwater franchise reads that the owners of the franchise "shall furnish gas to the corporation and citizens of said city whenever and wherever required, to the extent to which they may have had their pipes

b. See Chapter I Section C.
a. Charter and ordinances of St. Paul. (1863) P. 83

laid".

It was about this time that the courts were recognizing that gas companies were business affected with a public interest, and hence subject to the requirements, among others, to serve the public without discrimination. The Wisconsin Supreme Court was the first to make this affirmation in the case of Shepard vs. Milwarkee Gas Light Co.[a] decided in 1858. The Supreme Court of the U. S. in two decisions in 1885[b] held that a gas company was not a private, but a public calling. One of the natural results from this, would, of course, be that the company must furnish services without discrimination. It is no where disputed now that gas companies and public utilities generally must supply services, in so far as they are possible, to any one who desires them.

2. Regulation of quality of gas.

a. Regulations in early franchise.

There appear to have been no general

a. 6 Wis. 539
b. New Orleans Gas Co. vs. Louisiana Light Co. 115 U. S. 650 and Louisville Gas Co. vs. Citizen Gas Co. 115 U. S. 683.

statutes relating to the quality of gas, prior to 1893. The law of this year applies only indirectly, by stipulating that the companies shall be subject to any regulation which the city councils may from time to time impose (supra). Before the law was passed, a few attempts had been made to regulate the quality. The Stillwater franchise of 1874 provides that "the gas manufactured and furnished .... shall at no time be of a quality or standard less than what is known as 10 candle gas." [a] The Minneapolis Charter of 1881 gave the council the right "To regulate and control the quality and measurement of gas, to prescribe and enforce rules and regulations for the manufacture and sale of gas, to provide for the inspection of gas and gas meters, and to appoint an inspector and other officers if needed for that purpose, and prescribe their duties". [b] This important power has been effectively exercised, in recent years especially.

The Duluth franchise (1883) contained

a. Section 8. Stillwater Gas Company's franchise
b. Charter of Minneapolis Section 5 sub. section 41

a clause on this subject. "The average standard quality of said gas to be furnished by said Gas and Water Co. for illuminating purposes shall be of an illuminating power of not less than twenty standard candles, and the company shall supply and maintain in working, a jet photometer to indicate at all times the candle power of the gas."[a] In 1893 Winona renewed its gas franchise with this new provision "The said company shall ..... have in readiness ..... with gas of as good quality as is manufactured in the city of Dubuque or St. Paul."[b] The original franchise of 1870 had provided (Sec. 5) that "such company shall in no instance supply the city or any of its inhabitants with an odorless gas "[c].

It is clear that in the earliest franchises there were only a few attempts to regulate the quality of the gas supplied. Some of these were really of no great significance, because inadequate as in the case of Stillwater and too indefinite as

a. Ordinances of Duluth (1895) P 390 - Sec. 13 P 405
b. Charter and ordinances of Winona (1893) P 252 Sec. 4
c. Ibid Sec. 13.

in Winona.

b. Extension of Public Control in Recent Years.

By the twentieth century, however, there had come, here, as elsewhere, a marked advance in public sentiment and in several of the recent franchises the cities have claimed privileges not dreamed of at the beginning of the industry in their state. St. Paul in 1904 granted a new franchise to the St. Paul Gas Light Co. which contains some new assumptions of regulating authority by the city. Section 10 reads: "The gas manufactured and furnished by said grantee shall all be good and first class for illuminating purposes, free from all noxious impurities, and all coal gas shall be of not less than 16 c. p. and all water gas of not less than 22 candle power, within a radius of one and one-half miles of the holder from which the same is distributed into the mains, such illuminating power to be determined by the photometric process in ordinary use.

"The city by such person or persons as it may from time to time designate for that purpose, shall

at all times, during the business hours of any day, have full and free access to the gas works and the plant of the grantee and all departments thereof, for the purpose of full and complete inspection, and making tests of the quality of gas furnished.a"

The Moorhead ordinance of 1912 to the Union Light, Heat and Power Co. of Fargo (H. M. Byllesbye) went further than the St. Paul franchise. It provides for a gas inspector to test the quality of gas supplied by the company. It requires a heating value of not less than 550 B. T. U. The candle power requirement is rather lower than the customary standard, being placed at 15 candles. By far the most notable and complete case of municipal regulation in this state is that of Minneapolis. Shortly after the existing franchise-contract was passed in 1910 the council passed a regulatory ordinance under authority of the charter provision quoted above which contains the most detailed and explicit provisions relating to inspection, candle power, heating value, pressure of gas, impurities in the gas, and

a. Ordinances of St. Paul (1907) P 572 Sec. 10 of the franchise.

every imaginable detail of service and quality. The complete Minneapolis history of 1910 to 1914 will be developed separately.a

It is apparent, from this discussion that there has been a tendency more and more on part of the city to regulate the quality and services supplied by gas companies. . There are exceptions to the general tendency - too many of them, perhaps. Thus in Winona, the city council in 1904 granted a franchise for 25 years, identical with the one which had been granted in 1895. Stillwater in 1903 practically renewed its franchise of 1874 - with but few new provisions relating to service. Northfield's franchise of 1912 contains no clauses relating to service. Yet there has been a nation wide tendency toward more and more insistence upon the rights of the public. This tendency, we believe, is being experienced in Minnesota.

3. Regulation of Prices.

a. Necessity of Rate Regulation.

Closely connected with the power of public

authorities to determine standards of quality, is the right to regulate prices. The two must go hand in hand -one without the other would be a little service to the city or state. The regulating authority might require that the candle power be increased from 16 to 20, for instance, or the heating value raised from 500 to 550 or 600 B. T. U. But if the company had the opportunity to make a slight increase in the price of its gas, the consumers would derive no benefit from the higher standards. Correspondingly, if the city were to reduce the prices charged by its gas company, but at the same time had no voice in maintaining certain standards, the gas company could easily evade the effect of such a reduction in price by reducing the heating value or candle power of the gas which it manufactured or by forcing irregular pressures, or even by blowing air into the gas. It is very clear that if either the city or state is to regulate one, it must also have a voice in the other.

b. Early Efforts.

In a general way increased public author-

ity over quality has been accomplished by a corresponding increase in the voice the public exercised in rate making. The earliest franchises contain many interesting, if not significant, provisions relating to prices. Thus the Minneapolis, Stillwater, Red Wing, and Faribault franchises of the 70's stipulate "that ..(the company).. shall furnish gas ..... at rates not exceeding those charged by companies in neighboring cities, regard being had to freight and charges for material for manufacturing gas". The Winona franchise of 1895 states that the price shall not exceed $2.50 a thousand cubic feet, and this identical franchise, as we have already noted, was regranted in 1904 for 35 years. Such clauses as these are of some historical interest, as they show us the point which public sentiment had reached. But it is perfectly evident that as regulating factors they are too indefinite and in comclusive to be of any practical value. Since 1900, however, there has been, in most communities, a marked development of public opinion, to the effect that the public should have authoratative

voice in rate making.

c. Modern trend in rate regulation.

As far back as 1893 the state law had made it possible for the city to regulate prices. This possibility, however, had to be embodied in the franchise to be effective and did not become effective till more recently. The trend toward public control of rates can be especially well seen by examining the franchise provisions found in the newer municipal charters.

A few are as follows: -

St. Paul (1912) Chapter X Section 154. "In granting any and all franchises the City of St. Paul hereby reserves the right either through the council, or otherwise as provided by law, to regulate the rates to be collected for the service to be rendered under said franchise..... The City of St. Paul is hereby granted the right to fix rates for all public services within the city."

Ada (1908) Chapter XIV Section 224. "The City shall have the power to regulate and control the maximum

rate to be charged by any corporation or person exercising any franchise in the city, but such price shall be fair and reasonable to such corporation or person and to the public. The manner in which such rate shall be regulated shall be fixed by the council by ordinance and said council shall have the right and is hereby authorized to provide by ordinance for the appointment of commissioners to fully investigate and determine all questions with reference to rates to be charged by any such corporation or person." The Mankato charter adopted in 1910 has an almost identical clause (Chapter XI Section 107) Substantially similar clauses are to be found in the charter of Duluth, Detroit, Staples, Moorhead, Granite Falls, Austin, Tracy, Glencoe, Renville, Hutchinson, Ortonville, Crookston, St. Cloud and in fact in almost every municipal charter which has been framed since 1900. The charter of Bemidji goes so far as to state that "such corporation shall have no right to include in the charge for service any return upon the value of the franchise or grant of the franchise," and the St.

Paul charter after including this same item has the unique requirement that "No charges or profits of any public service corporation doing business in the City or St. Paul shall be founded upon unearned increment of land."

Obviously all rates must be reasonable and most charters and franchises which specify the power to regulate rates, add a clause relating to reasonableness and court review.

The most of such charter provisions, as yet have been merely potential municipal powers, not actually exercised, or embodied in the public utility franchises. We have already seen that the rate provisions in the franchises of Stillwater, Winona, Red Wing, and Faribault are of no significance. The franchises of Mankato and Northfield contain no such provisions. In Duluth, since the advent of municipal ownership there has been no problem of regulation for gas. Excepting in the Twin Cities and Mankato nothing has been done to regulate gas rates and only in the Twin Cities, have the efforts had any tangible results.

Rate regulation has been tried out by Minneapolis with every appearance of success.[a] In fact the regulation which this city has forced upon the gas company is recognized as one of the most successful attempts at municipal regulation in the United States. In St. Paul, control over the prices for gas commenced in 1914, when the council issued the new franchise, under which the St. Paul Gas Light Co. is now op erating. It was made a part of the franchise that from Jan. 1, 1905 for one year, the price of gas should be $1.10 per thousand cubic feet; from Jan. 1, 1907 on, never more than $1.0 0 a thousand.

Beginning January 1, 1914 a maximum rate of $.90 went into effect, and still is in, pending a disputed reduction to $.85 or $.80 as a maximum.

a. See Chapter 5

d. Experience in Mankato.[a]

Mankato is just involved in anattempt to regulate rates, an effort, which is arousing much local interest. Several months ago, under authority of the new city charter, three men were appointed as a public utilities commission. Their duty was to make a scientific valuation of the property used by the Consumers' Power Company in the manufacture of gas, and on the basis of their findings to recommend a new rate for the city of Mankato.

They hired Mr. Earl Jackson, an engineer, to do the technical part of the valuation work for them. The company, meanwhile, secured its own engineer, and the two valuations, naturally were widely different, the discrepancies largely arising from the intangibles.

The corporation's engineers included 7 1/2 % for engineering fees, 1% for insurance, 5% for legal

a. A portion of this information was supplied by Mr. James H. Baker, a teacher in the high school of Mankato. The rest comes from the Mankato Free Press for March 11, 1914, April 13, 1914 and other days.

organization, 6% for interest during construction and 15% for brokerage fees. These were all in addition to 15% for contractors fees, and 10% for any possible omissions or contingencies, making a total of 59½% asked for intangibles. The city's expert allowed 22½% for these name items. "Going value" was also allowed by the city in amount, $13,000 which was not materially less than the $16,430.claimed by the Company, although the latter had the frankness to call it " good will ".

The total difference between the commission's findings and the company's was $140,506.46, the difference between $179,910.94 and $320,417.40 the two respective valuations. Two members of the commission, including the admittedly most able man of the three, calculated that $1.10 would afford a fair return to the company. The third member reported in favor of a rate if $1.00. The company claims, with probable truth, that the third member of the commission flatly refused to consider the findings of the engineers; that he declared the people wanted dollar gas, and would get

it.

After the dommission made its findings and report to the city council, it was accepted and filed, and thereupon the councilman proceeded to pass the first reading of an ordinance declaring for dollar gas, April 27, 1914. The majority report of the commission was utterly disregarded. The principal reason for this appears to be that two or three of the alderman ran on a "dollar-gas" platform, and one of them, particularly, is trying to establish a record which will serve him as good campaign material when he runs for the mayor's office.

If the rate is passed, as it likely will be, the company will contest in the courts, and it is to be expected that the lower rate of $1.00 will not be sustained. The courts, in fact, could not well do otherwise, since the city's expert , Mr. Jackson, whose valuation is much lower than the company's estimates, figures that $1.10 a thousand will be required to afford a fair return. The alderman can claim to the

voters, however, that they did their best. They passed the ordinance, and they can not be held responsible for the decisions of the courts.

This is the great weakness of municipal control, the inevitable intermeddling of selfseeking politicians who take advantage of what should be an opportunity for developing real local statesmanship, and twisting and distorting it to their own personal ends.

On the other hand, in this case it may be said that there appears to be some justification for the position taken by the council. This company, in keeping with most others, has not been conducted on the public service idea. No one has known how much gas was being sold, how great the earnings have been, or what the profits have been. The city has not been able to inspect the gas or the meters, and there is a strong feeling on the part of many that the company has taken advantage of this lack of supervision to sell cheap gas at the highest price. There is likewise a strong belief that the company has been trying to deceive the

public on the matters of its operating expenses. During the last four years the cost of running the business increased by $10,000, although the volume of gas sold in 1913 was less than in 1910. Admitting, however, that the company has been neglectful of its public responsibilities, it would almost appear that in justice we must call the present efforts at regulation, a mixture of regulation, punishment and politics.

In spite of all their shortcomings, one big advantage can be found. Not only will rates likely be lower, but the people will no doubt know much more about the company than they ever did before. The Consumer's Power Company will in a truer sense than previously, become a public service corporation.

C. Control over Financial Affairs

1. Reports.

If the city will regulate services, we have seen that it must also control the prices charged. Likewise if it will determine prices it logically should be able to inquire into the financial status of the company so regulated. If public sentiment feels that profits are too large, rates will be forced lower. If it is the public opinion that profits are only reasonable, the companies will be left free to pursue their course unmolested for the time. But in all cases one of the most effective forces of regulation is publicity. This is a well recognized principle in every phase of public endeavor. No where can it be more true than in the public supervision over utility corporations.

One way in which this publicity is being sought, is the requirement that companies file annual statements showing their detailed financial operations. Many states today have laws requiring that all public service corporations file detailed annual reports.[a]

a. Commission Regulation of Public Utilities Ch.X pp 717 - 798

In Minnesota there is such a law relating to railroads,[a] but lighting and power companies are not so required by state law. Many municipalities, however, under their general powers of regulation have assumed the authority to require accounts, and this authority today may be found in many of our city charters. Thus the Detroit charter reads (Ch.14 Section 216)

"Every corporation or person exercising any franchise in the city of Detroit shall file annually on the first Monday in February, in the office of the clerk, a statement subscribed and sworn to by some officer of such corporation or person who knows the facts, setting forth in detail for the preceeding calendar year, the then actual cost of the plant or business operated by such party, the actual incumbrance, debts and obligations thereon, if any, the amount of stocks issued, and to whom, the gross earnings, the expenses and the net income, and the amount of stock of any such corporation. Said

a. Revised Laws 1905 Section 1984

statement shall be open to the public inspection and if the owner of any such franchise refuses or neglects to file any such report as herein provided, the council may proceed by ordinance to cancel and revoke such franchise".

Provisions of a similar nature may be found in the charters of St. Paul, Duluth, Crookston, Staples, Bemidji, Moorhead, Rochester, Sleepy Eye, Austin, Ada, Tracy and others. Such provisions make it imperative for reports to be filed by public utility companies.

But charter clauses are not absolutely necessary to compel such reporting. If a city insists on inserting a similar clause into a franchise, it may be done whether or not it is specifically required by the charter. Thus the Minneapolis Gas Franchise of 1910 (see next chapter) requires annual statements and gives a detailed list of the points which the statement should contain. We are rapidly coming to a time when all public service corporations will be required to file reports. In Minnesota the legislature has been slower to

compel this than in other states because of the struggle between local vs state ideas of regulation, but no matter whether state control is adopted or not it is likely that a more general requirement for reports will become a state law in a few years at least.

2. Accounts

Closely connected with the right to require reports, is the power to supervise methods of accounting. In fact reports may be almost worthless, if the systems of accounting on which they are based, are misleading. Betterments, properly chargeable to capital, can be charged in with maintenance, and thus make the net earnings appear much less than they really are, and other bookkeeping devices easily may be employed, in order to deceive the public. The recent investigation made by the Inter-state Commerce Commission of the accounts of the Chicago, Milwaukee and St. Paul and the Chicago, Milwaukee & Puget Sound lines is an excellent example of how accounts may be manipulated.[a] It was found that one year, revenues were made to appear

a. St. Paul & Puget Sound Accounts 29 I.C.C.508 (Feb.9,1914)

large, when in reality they were small, and later, when the inevitable resulting reductions appeared, they were claimed to have been caused by high labor prices, and the refusal of the commission to advance railroad rates. This,too, after a system of accounts had been prescribed by the commission. What could be done, where no power of so prescribing accounts exists, is well stated in the report.

"Prior to 1907, when the Commission was given real power to control such matters, the accounts of carriers in many cases were influenced more by other considerations than by a desire to reflect the actual parts. A financially strong road, making large net earnings would not hesitate to conceal the facts by adding to its operating - expense accounts sums disbursed in improving its property; on the other hand, a financially weak road, seeking to enhance its credit by a good drawing of operating results, would include in its property accounts sums expended in operation. The result was that a carrier's annual and monthly statements

of net revenue often were nothing more than the particular showing desired by its executive."

What can be done by a railroad, can just as easily be done by a gas company or other public service corporation. If reports are to be valuable guides t o public sentiment, this same public must have a voice in prescribing accounting methods. In this particular, regulation in Minnesota has been inadequate. Not a franchise contains a clause giving the cities the right t o prescribe systems of accounts, or even to approve or disapprove of systems installed by the companies. The St. Paul Charter(section 154) in its provision for annual reports does reserve considerable authority and permits city officials to inspect and examine the accounts of the companies over accounting methods. It is the one exception.[a] But even though cities had the power, it is not altogether certain they would or could exercise it on account of their lack of knowledge of the kind of a system needed. It is no easy task to prescribe an accounting system which will be practicable and usable for the company, and at the same time guard

a. The Duluth charter (section 84) is very specific as to what the report shall contain, but does not authorize the council to prescribe any particular forms.

against any bookkeeping devices which might deceive the public.[a]

Just as the method of reports could best be handled by a state board, uniformly for all cities, so the matter of accounting could best be handled by one centralized authority. Once a single, workable and satisfactory system of accounts was formulated, every company in the state would be provided for. Reports based upon a uniform method of accounting would give a real and valuable foundation of facts, upon which public opinion might well be based.

a An interesting case, somewhat in point, is that of the law passed at the 1913 session of the Minnesota Legislature, empowering the State Examiner to prescribe a system of accounting for municipalities. A year after the law had been passed he had not done so, because of the difficulties involved.

3. License Fees and Taxes

Several municipalities require a yearly tax or license fee, in addition to general taxes or property. Thus the franchise of the St. Paul Gas Light Co. calls for a yearly license fee of 5% of the gross earnings. This is am important item in municipal revenue, amounting in 1913 to $88,674. 14.[b] Some of the cities require reports for the primary purpose of administering such a license fee. The charter of Staples provides (Section 223) that all franchise shall be conditional upon payment of an annual license fee- the amount to be determined by the council, but never less than 1% of the gross earnings of the company. In several city charters there is a "percentage" clause to the effect that "the City Council shall have the right in its discretion to provide for the payment to the city of a percentage of the gross earnings". Such is the provision in Ortonville, Glencoe, Renville,, Granite Falls, Glenwood, Montevedeo and Cannon Falls. The charters of several cities go into considerable detail

b. Report of the Comptroller of St. Paul for 1913 p.17

or to what the license fee shall be. This in Crookston (Section 147) if the gross earnings do not exceed $25,000 the fee is 1%; if the total receipts are between $25,000 and $50,000 the percentage of the tax is 1½; if the gross income is between $50,000 and $100,000 the tax is 2%, and if the annual total earnings exceed $100,000, 2½% shall go to the city. The Sleepy Eye, Austin and Tracy provisions are about the same, except that the license fee is ½ of 1% lower for every amount.

The people who give the franchise frequently regard the license fee as a charge upon the business, for the privilege it receives. But it is only a method of indirect taxation, the burden of which falls inevitably upon the users of gas. In St. Paul, for instance, the price of gas is nearly 5¢ higher than it normally would need to be, on account of the 5% gross earnings tax. If a city wishes to adopt such a method for collecting its taxes, it has full power and

authority to do so. But the real nature of such a tax should be made public. The people should realize that they are not placing an extra burden on the company, but rather a different form of burden upon themselves.

4. Stocks and Bonds.

One of the most interesting phases of regulation which has developed in Minnesota, is the attempt on the part of cities to control security issues of public service corporations. There is no state-wide law covering this point, and a few cities have attempted to prevent the ills of stock-watering. The Minneapolis Gas franchise, requires that securities be sold only for cash at their nominal value on good faith and that the proceeds be used exclusively for betterments, extensions or refunding.[a] Little Falls is comtemplating, in its proposed franchise to the new gas company, to include a provision that all security issues must be approved by the city council. At least two cities, Bemidji,and Duluth have put such requirements into their municipal charter. Section 118 of the Bemidji charter, which is

a. See next chapter.

almost identical with the Duluth section, reads: "No public service corporation shall increase the amount of its capital stock or the amount of its bonded indebtedness, or issue bonds, without first obtaining from the council permission so to do.

"In making application for such permission, the public service corporation shall file with the council a sworn statement showing the purpose for which such issue of stock or bonds is desired, and such statement shall be published at least once in a newspaper of the city one week or more before the hearing on such application. The expense of publishing shall be born by the applicant."[a]

In general, there has been very little attempt to regulate the issues of stock in this state, and not a great deal in other states, except for the well known work of the commissions in New York, Wisconsin and especially Massachusetts. People in Minnesota have gone on the belief, based on the doctrine formulated in the case of Smyth vs Ames, that securities were not to be

a. Section 85 in the Duluth charter.

The basis for rate making but that valuation was the all important factor. Base rates on proper valuation, it is held, and stock watering will care for itself.[a] Yet certain of the cities, it appears, have not held this sufficient, for the few restrictions on security issuing appears to be based on the belief that improper or excessive capitalization is wrong.[b]

b. This topic is treated more fully in chapter six.
a. This is the view of the Minnesota Home Rule League. See concluding chapter.

D. Miscellaneous Regulations.

Hours of Labor, Labor Disputes, General Clauses, etc.

The above discussed features are the ones more commonly found in franchises, charters or state laws. A few cities in Minnesota have gone somewhat beyond the general average, in their attempts to secure effective regulation. Thus the Minneapolis Gas franchise has a labor clause, quite distinctive amongst Minnesota franchises. It limits the hours of labor of all workmen for the company to the number established by law for men in state employment, and thus has established by franchise an eight hour day for all employees of the Minneapolis Gas Light Co.[a]

Bemidji and Duluth both have a unique charter provision, which may become important at some future day, relating to arbitration of industrial disputes. It reads as follows:[b] "If any controversy, dispute or disagreement shall arise between any public service corporation and its employees, which, in the opinion of the council, interferes or threatens to interfere with the service which such corporation owes to the city or to the public, the council shall have the authority and power to

a. See next chapter.

b. Section 120 in the Bemidji charter and section 87 in the Duluth charter. Both are almost identical.

compel the parties involved in such controversy, dispute or disagreement to submit the same to arbitration under such reasonable terms and conditions as the council may by ordinance require; and the findings of the arbitrators shall be advisory or mandatory as determined by them in each particular case."

Nearly every charter or franchise stipulates that any violation of the provisions will be sufficient cause for the forfeiture of the franchise by the council.

Several charters (Mankato, Duluth, and St. Paul for instance) also state that the various provisions named shall not limit the council to imposing those particular ones, but that it may add any other restrictions to the franchise which it may deem to be of public value.

E. Administrative Machinery.

1. Control through city councils.

We have already seen that whatever regulation has been carried on in Minnesota, has been performed by the municipality. The city has been the controlling unit. The detailed work, in most cases, is supervised directly by the common council. In Minneapolis, for instance, the council has been the body which has been dealing with the gas company in all the efforts of the past few years at public control. It has hired engineers, accountants and attorneys to advise it. It appoints inspectors to carry on some of the detailed routine. But the council is the important organ. This is the case in a majority of cities in the state.

2. Modifications of council control.

There have been growing up certain modifications of this idea in recent years, however. In Mankato, Faribault, St. Cloud, and Glenwood, the charters, all of which have been adopted within the past two or three years, all nominate the mayor as a general supervisory agent over

public utility corporations. The provision, which is substantially the same in all four cities, is as follows:

"The Mayor shall be charged with the general supervision of all public utility companies so far as they are subject to municipal control; he shall keep himself informed as to their compliance in all respects with the law, and shall see that the terms and conditions of all franchises, whether grants by the city or other authority, are faithfully observed.

"He shall cause to be instituted such actions or proceedings as may be necessary to prosecute public utility companies for violations of law, or to revoke, cancel or annul any franchise granted by the city to any person, company or corporation which has become forfeitable in whole or in part, or which for any reason, is illegal or void."[a]

Just exactly what this power is, is not quite clear except that the Mayor is appointed a sort of watch dog to see to it that the public service corporations abide by

a. This is Section 38 in the St. Cloud charter, Section 52 in the Faribault charter, Section 45 in the Glenwood charter and Section 40 in the Mankato charter. In this last there is an additional sentence: "The City Attorney on demand of the Mayor must institute and prosecute the necessary actions to enforce the provisions of this section."

their franchises. Without assistants to investigate, however, such supervision might not amount to a great deal. In Mankato it is provided that the council may appoint a "public utility commission," that is a body of men with power to investigate rates and make recommendations to the council.[a] Such a commission has been appointed, and it is clear that this body would be in a better position to supervise the utilities than the Mayor Such a commission as this would be beneficial to a city. It could focus public attention on sore spots that needed the x-ray of publicity, and could serve as a useful guide to the council. The principal difficulty in connection with such a body would be its expense, since but few cities in Minnesota could afford to maintain a permanent staff of men competent enough to give information that would be really valuable.

3. New Experiment in St. Paul.

The city of St. Paul is about to embark on an interesting experiment in municipal control. Under its new commission charter, just adopted in 1913 and now(1914)

a. Chapter 9 of the charter, Section 107. The Ada charter has a similar section (number 334.)

being put into operation, one of the council men is to be Commissioner of Public Utilities. [a] Along with his powers relating to the municipally owned utilities, and to the public lighting, he is to be the representative of the city in its efforts to control public service cor porations. Subject only to the council he is to have full charge of the regulation"within the city of all telephone, telegraph, lighting, heating, power, street rail way and other municipal transportation and all other pub lic utilities services whatsoever which are subject to the control of (the) city." He is to act in accordance with the city ordinances. All licenses, permits and other privileges granted by the city to any public utilities, must meet with his approval. He is to have access to the books and accounts of any utility. He is to have charge of the testing and inspecting laboratories, which are maintained to regulate the quality of the services supplied by the utilities. Every year (March 1) he is to make a report to the council, of the business transacted during the preceding calendar year of all the utilities under his supervision.

a. Chapter 11 of the Charter, Sections 440--450. Duluth, with the commission form of government also has a commissioner of public utilities (Chapter 9 Sec.18 of the Duluth charter), but his duties are not described in detail as in St. Paul. Under his supervision has gone the work of the municipal water and

These provisions, it is perfectly clear, will make it possible for the city to carry out a thorough and successful regime of public supervision. In no other city in Minnesota have such adequate and thoroughgoing methods of regulation been established. If St. Paul elects a man to that position, efficient and intelligent, there is no reason why the capitol city should not soon stand forth as a shining example of what a city government is capable of doing.[b] Certainly every facility for control and every power desired is now placed in the hands of the city.

This new departure in St. Paul appears to be looking in the right direction. If a city is to control at all, such control should be placed, as nearly as possible, on a scientific, intelligent and thoroughgoing foundation. To create an office, the primary function of which is to attend to matters of public utility supervision, ought to produce efficiency, as apparently has been the case in Duluth.

a. (Continued from preceding page) -gas department, and it is interesting to note that in spite of low electric rates furnished by the private company, the public satisfaction with government ownership of water and gas, has led to a movement for the municipal acquisition of the Duluth Edison Electric Co. See pp. 8-9 of the Report of the Water and Light Dept. 1913.

b. The commissioner is to be paid $4,500 per annum and proper provision is made for assistants.

F. Summary of Regulations.

It is evident from the preceding discussion that in some form or other and in some city or other, almost every phase of regulation has either been attempted or contemplated. We have seen that no public service corporations may arbitrarily cut off its services to its customers; that all excavations, and mains are under public supervision. This supervision is more detailed and effective in some cities than in others, but it is always present. Control over the quality and nature of the services in some places is complete, and in some cases entirely inadequate. Likewise some cities regulate prices, and many do not. Some require annual reports, some none at all, and practically no supervision of accounting methods is exercised. A few cities attempt to regulate the security issues, and a few have asserted their authority over labor problems. Most of the regulation is by franchise, and we have seen that the franchises must conform to charters, and both to state legislation. Charters today have become more and more explicit, as have franchises, and state laws too, but franchises in most cities of Minnesota, must conform to important charter and statutory provisions.

CHAPTER FIVE.

THE MINNEAPOLIS SETTLEMENT

A. The Franchise of 1870.

The most remarkable and advanced stage of franchise control over gas companies in Minnesota is to be found in Minneapolis. The gas ordinances of this city are recognized as among the best in the country. They have been in force now since 1910, and are both the result and the cause of great popular interest in the subject of numicipal regulation of public service corporations.

The original franchise approved by the city, February 24, 1870, gave the owners the exclusive privilege of manufacturing and selling gas for 40 years.[a] The city was to have the right to purchase at the end of the 40 years, but if it did not exercise this privilege the franchise was to continue for 20 years more.

a. The provision in the ordinance was as follows: The Common Council of Minneapolis do ordain: Section 1. That Dorilus Morison, H. S. Southard, W. P. Westfall, S. C. Gale and, F. A. Gilson and their he irs, executers, administrators and assigns, shall have for a period of forty years the exclusive privilege of manufacturing and selling gas, to be made from coal and other materials, in the city of Minneapolis, and the streets, avenues, lanes, alleys, squares and public grounds thereof, and the buildings, manufactories and houses therein situated and contained, and to have the exclusive right to lay pipes for the purpose of conducting gas in any of the

The sections relating to the purchase were of much importance in 1910 and so are given here in full.

"Section 9. That if at the expiration of forty years the said city shall desire to purchase said franchise and said gas works, they shall have the privilege of doing so, upon the following terms, namely: That said city may purchase the franchise pertaining to the territory and gas pipes, works fixtures and other property pertaining to said business at the actual value of the same, the value to be fixed by three arbitrators, who are to be chosen as follows: One by the city, one by the owners of the franchise and third by the arbitrators thus chosen, and the arbitrament or award of value made by these three, or a majority of them, shall be

a. (Continued from page 1[illegible]) streets, avenues, lanes, alleys, squares and public ground of the said city, and to adopt any other means necessary to furnish gas to any inhabitants of said city, it being understood that this ordinance is not to interfere with the right of any person or persons to light his or their buildings with gas manufactured by the owners or occupants of such building for that purpose.

the price at which said city may purchase said franchise and property.

" Section 10. That should the city decline to purchase at the valuation aforesaid, then the rights, franchises, and privileges are to be continued twenty years longer, to the said persons, their heirs, executers, administrators and assigns, with the conditions hereinbefore in this ordinance stated."

B. The Controversy of 1909-1910.

The year 1909, when the franchise was nearing its date of expiration, witnessed one of the most important civic struggles in the whole history of Minneapolis. It began with the control of the situation pretty thoroughly in the hands of the gas company, and it ended with victory for the city at almost every point, The severity and intensity of the campaigh is graphically stated by Mr. Stiles P. Jones: "For eight months the contest was waged. Its conclusion left the mayor broken in health, while the company's chief council sought warmer climes to restore his shattered nerves; the chairman of the special committee having the franchise in charge retires in public life this year (1910) throught sheer weariness with the exacting labors of his job, and the animosities created among the conflicting elements of the citizens over the merits of the controversy will not soon heal."[a]

1. Beginning negotiations.

Negotiations were inaugurated early in the year

a. "The Minneapolis Gas Settlement" - paper read by Stiles P. Jones at the 1910 Conference for Good City Gov't. - Proceedings, p. 145.

On February 26, 1909, the city council appointed a special committee to consult with the company as to what concessions it would offer the city, should the latter waive its right to purchase. This committee was destined to remain in active existance for more than a year, before its duties were finally performed in full. At the beginning of the year there was little thought of the complicated issues which soon were to arise. It was generally believed that the company would make certain concessions; that the city would accept them; and that the bargaining would be complete. [a] Early in the year, at the request of the Minneapolis people a law was passed by the state legislature, authorizing Minneapolis to purchase, under eminent domain proceedings, any electric, gas or water properties, and to issue $2,000,000 bonds for that purpose. [b] A two-thirds vote of the city council, ratified by a four-sevenths vote of the electorate was required. The sale price was to be determined by appraisal. This law, known as the Eminent Domain Act of 1909, played an important part in the later days of

a. Compare Stiles P. Jones, paper Locus Cit.

b. Laws of Minn. 1909 - Chapter 372. Of course it must be understood that the law did not name Minneapolis, but the classification of cities in Minnesota makes it possible to all practical intents, to pass special municipal legislation.

the struggle.

2. The company's first offer.

In June 1909 the gas people submitted their first proposition to the city council. They volunteered to reduce the price to private consumers from $1.00 to $.90 a thousand cubic feet, and from $.90 to $.80 to the city. In addition they would supply gas free of charge for 2,112 street lamps already installed and for three hundred additional each year during the whole twenty year period. In return they asked that they be permitted to lower the candle power requirement from 23 to 18, and the heating value standard from 635 British Thermal Units to 600 B. T. U. How valuable such a concession would be no one seemed to know. Mayor Haynes consequently secured Prof. W. D. Marks, a gas expert, to come to Minneapolis and assist the special committee of the council. Judge F. C. Brooks was retained as the special legal adviser, and other experts were also consulted by the special council committee. All of this assistance tended greatly to strengthen the city's

position.

The difficulty of the situation lay in the fact that the franchise appeared to be automatically renewable in case the city did not purchase. The majority of the municipal authorities did not wish to purchase, but they were also decided that the franchise might not be renewed without complete changes. Mayor Haynes had declared that the franchise ran out in 1910 and that there would be no renewal without council permission. In this view he was sustained by Judge Brooks.[a] The opposite view was held by the city attorney, Mr. Frank C. Healy.[b] He was undoubtedly correct when he insisted that the council in 1870 would not have spoken of the franchise four times in section 9 (relating to the city's right to purchase), unless that franchise still continued to exist. This view finally prevailed.

3. The company's second offer.

After bargaining all summer the company presented a second ordinance, (November 17, 1907) containing several new concessions which appeared to be quite

a. Report of F. C. Brooks to the Special Committee of the City Council, negotiating with the Minneapolis Gas Light Co. p. 10.

b. Opinion of Legal Questions Involved; submitted by the City Attorney to the Special Committee of the Council, negotiating with the gas company. pp 12-14

liberal. It offered to sell gas to private consumers for $.85 and to the city for $.65. It proposed to make the same quality reductions that it had asked in June (18 cp. and 600 B. T. U.) It also volunteered to shorten an old franchise which it had received from St. Anthony, (before that city had consolidated with Minneapolis), by 16 years so that this old franchise should run out in 1930 when the regular Minneapolis ordinance would expire. Prices, according to this proposed ordinance could be altered either by the city or by the company, subject to arbitration. Many people felt, however, that the price reductions would be nearly offset by the quality reductions, and almost everyone was of the opinion that the St. Anthony franchise never had been valid, so that the concession relating to it was worthless.[a] The old arbitration clause had not proved practicable so the last suggestion of the company likewise failed to win popular approval.[b]

4. The Special Committee Reports.

The gas people appeared very unwilling to go any

a. See opinion of Judge Brooks, p. 1 or opinion of City Attorney Healy, p. 4.

b. See speech of Mayor Haynes, before the Saturday Lunch Club - printed in a pamphlet issued by the club.

further and the most strenuous part of the struggle came up in January and February. The city was determined to secure complete control and on January 21, 1910., the special committee introduced its ordinance. The principal bone of contention which arose between the city and the company from this time on was whether or not the city should retain the right to purchase the gas works at frequent intervals. The company was set against it, and Mayor Hayes, especially, was most insistent upon it. "In my mind", he said, "it would be little short of an official crime to deliberately and forever surrender the people's right to purchase the plant. Said right should not for any reason be waived for a longer period than five years, with an agreement that if not then exercised it shall become suspended but revive automatically every five years thereafter under like conditions".[a] This ordinance which passed the first reading[b] made no reference to city purchase, but a week later January 28, 1910 it was introduced by the committee with the desired five year purchase clause.[c] At a special meeting on February 1, it passed the second reading and since approved by

a. Council proceedings of Minneapolis, 1910 p. 35.

b. Ibid. p. 44

c. Ibid pp. 73 and 83.

the Mayor.[a]

5. Mayor Haynes' opinion.

In a message on January 28, Mayor Haynes gave a lengthy and powerful argument in favor of this frequent right of purchase.[b] He claimed that the right to purchase might be needed to prevent combination with the electric company. He called attention to the growing importance of the gas industry, on account of the increasing importance of the use of gas in municipal life. At that time the U. S. Steel Corporation was planning to build a great fuel gas establishment in Duluth, which might be able to pipe gas to Minneapolis. The Mayor argued that if the city did not have the right to purchase, the company might exercise its monopoly privileges to keep out this new supply of cheap gas, to the great detriment of Minneapolis. He asserted that the city could finance the purchase if ever it decided to make it, for he felt the legislature would authorize the necessary bond issues. In closing he went into a discussion of the probable effects of such a sale, show-

a. Ibid. pp. 84-89

b. Council proceedings p. 51.

ing why the company was opposed to it. If an important city like Minneapolis purchased the local gas company the sale "would have a profound effect on the vast amount of gas stocks and bonds outstanding against the trust in the several other cities where it is largely interested. Let the news go out a little later that Minneapolis had made a success of its gas plant, and the effect would be demoralizing upon the gas stocks and bonds everywhere in the country.

"Gentlemen, this is the gas trusts weak spot, and they will not yield until we hit it.

"If we insist upon this "contractual ordinance" including the periodical right of purchase every five years and 80 cent gas instead of an 85 cent rate, our demands will eventually be conceded. The gas trust fears municipal ownership far more intensely than even the most conservative member of the city council."

This whole communication of Mayor Haynes shows a very scientific use of the "big stick" in forcing the company into line. It was pretty generally believed by those interested in the public side of the controversy

that actual condemnation proceedings would force the co
company's submission in a very short time. The Saturday Luncheon Club after appointing a committee of public spirited citizens, and listening to speeches by Mayor Haynes, Professor John H. Gray of the University of Minnesota, Atty. C. J. Rockwood, author of Eminent Domain Act and other attorneys, adopted a series of resolutions, to the effect that unless the company should accede to the demands of the city the city council should proceed at once to eminent domain proceedings, "leaving the way open. however, to abandon such proceedings at any time that that the city and the company may agree upon a settlement for extension of the present franchise that properly protects the consumer and conserves the public welfare."

6. The company's objections.

The company, however, protested vigorously against the purchase clause, and also against a labor clause which had been introduced, providing that gas employees should not work longer than the men in the employment of the state government.[a] This amounted to an eight hour day. The gas people declared that the first of these objectionable features would

a. Letter from the company, Council proceedings p 95

make it impossible for the company to refund several millions of its bonded debt which soon was to come due, and to handle properly any other financing plan, because the possibility of such early municipalization would drive away all purchasers of securities. It insisted that the labor clause was unnecessary, because the company had always treated all its employees in a satisfactory manner; and dangerous because in the future the provision might subject the company to increased financial burdens which it would be unprepared to meet. The Mayor replied vigorously, defending both of the clauses. They had both been passed unanimously, both represented the sound judgment of the council, both were only fair and reasonable and the council should "stand by its guns", he urged.[a] At the meeting at which these letters were read, the council first used its threat to purchase. A resolution declaring it to be the city's desire to buy the gas works and franchise of the Mpls. Gas Light Co. was introduced by the special committee and passed unanimously.

a. Letter of Mayor Haynes Council proceedings p. 91.

But the strong position the council had taken was severely assailed by many influential business men, who were afraid that municipal ownership might actually be undertaken. Under their influence the committee dropped the five year purchase clause and at the next council meeting (Feb. 18) substituted in its place a clause forbidding consolidation with the electric company. This change, however, was overrun by the more radical element in the council, and by the narrow vote of 14 - 12. a ten year purchase clause was put in.[a] The ordinance, so amended was passed and reluctantly approved by the mayor.

7. Final compromises.

Again the company refused to accept the ordinance and again the bankers and brokers and other business men urged the committee to relinquish the right to purchase, except at the end of the twenty year period. The company submitted a list of six conditions which should be added to the franchise.[b] The elimination of the city purchase clause was the most important. An-

a. Council proceedings 1910 pp. 126-128.

b. Ibid p. 137.

other related to the standards of gas to be supplied. The special committee had been framing a regulatory ordinance - separate from the franchise referred to, generally known as the contractual ordinance. The company had claimed that the two should be combined, and throughout the controversy endeavored to have embodied in the contractual ordinance at least the most significant features of the regulatory ordinance - especially the standards of gas. The city insisted, however, and finally carried the point, that the right to regulate quality and to inspect the gas, was a part of its police power delegated by the state, and could not be made a part of a contract. But the company's claim was strong enough to lead the committee to recommend a withdrawal of the 10 year purchase clause, and substitute a clause preventing consolidation with the electric company. At an adjourned meeting on February 23, 1910 the committee's views were accepted, though by no means unanimously, and the ordinance passed its final reading.

Mayor Haynes, who had struggled vigorously to

retain more completeprovisions for city purchase refused to sign the ordinance. He felt, however, that to veto it would cause only confusion and difficulty and so he allowed the ordinance to become a law without his signature.[a] It is probable that several of the councilmen were influenced to permit the withdrawal of the city-purchase clause, because of the existance of the Eminent Domain Act.[b] The council, however, had reached its final conclusion and would bargain no further. At its meeting of February 25, it unanimously passed a resolution [c] to the effect that if the company would not accept the ordinance, the city would purchase according to section 9 of the 1870 franchise, and the council nominated John Lind as its representative. But the company did accept, March 9, and the "contractual-ordinance" came into force.

Meantime the special committee had been busy with its regulatory ordinance and on March 24, 1910 this also was passed by the council and approved a week later by the Mayor.

a. Proceedings 1910, p. 145.

b. Compare Stiles P. Jones. " The Minneapolis Settlement"

c. Council Proceedings 1910 p. 171-2

C. The Ordinances.

1. The "contractual"ordinance, or franchise proper.

a. General nature of the ordinance.

The so-called "contractual-ordinance" is a form of agreement between the city and the company. Technically it is a continuation of the franchise of 1870, which had provided that unless the city should purchase after forty years, the franchise should continue for another 20 year period. Because the city waived its opportunity to purchase, to it were granted certain concessions by the company, and these constitute the provisions of this franchise. There are two qualifacations on the 20 year period of existence. The franchise is not to be construed as impairing the city's power to exercise the right of eminent domain as provided by state law. Moreove: if the company at any time should fail to abide by the provisions of the franchise, it first was to be subject to a penalty of $50 and then should the company fail to remedy the violation within 30.days

of notice from the common council, such failure should be cause for the council to annul the city's waiver, and for two years thereafter, the city should have full authority of purchase the plant.

b. Price regulation.

The price for gas was set at $.85 a thousand cubic feet for private consumers, and $.65 for the city. The company was permitted to bill the gas to its private consumers at $.15 above the net price and then allow that amount as discount, if bills were paid ten days after they were rendered. The city council is authorized, either upon its own initiative or upon request from the company, to establish new rates for gas.[a] This authority could not be exercised until three years had passed, and only once in five years thereafter. It was further provided that "the company shall thereupon comply with such ordinance as to rates, subject only to the provisions of section 5, and to furnish gas at rates not exceeding those so fixed until the same shall again be fixed and determined as herein provided." Rates

a. If the company should request an alteration in rates the council is required to act, whether it so desires or not.

moreover, to all private consumers, must be uniform with no discriminations. The council might direct the company to equip the street lamps as it felt would be desirable, and to install additional street lamps. For this and for the gas consumed the city council should determine the compensation. In case the city should discontinue the gas lighting or permit it to be done by someone else than the company, the council agreed to pay for all lamps and equipment installed under its direction, less the fair value of their use, to the company, from the time of installation to the date when the property was no longer in the hands of the company. If such value could not be agreed upon by the council and the company it is to be determined by three arbitrators, in the customary manner.

c. Judicial Review.

All prices established by the council, for private consumers, for the city, and for equipment always must be fair and reasonable, so as to afford a fair and reasonable return upon the "company's capital invest-

ment". This reasonableness is subject "to review and correction in any action or proceeding which shall be instituted by the company in any court having jurisdiction on the subject matter." The company's "capital investment" is defined to mean "the fair and reasonable value of its plant as a going concern, having regard to its condition of repair and its adaptability and capacity for generating and furnishing gas." Good will, franchise value, and security issues are all expressly to be excluded from such consideration. The "plant" is to include every form of the company's property actually used in manufacturing and furnishing gas.

d. Other provisions.

The franchise attempts to regulate security issues as well, by providing that no stocks or bonds shall be issued except in good faith and at their "fair value," nor unless their consideration is cash. The proceeds are to be used solely for betterments, extensions or refunding purposes. Publicity of financial operations is sought by the requirement of

annual reports, containing accounts of all securities, assets, liabilities, gross receipts, expenses of all kinds and net earnings. The labor clause, above referred to, limiting the hours of workmen to the hours set by law for men employed by the state of Minnesota, was still in the ordinance. (Section 9) Consolidation with any power, heat or lighting plant in the city, or pooling with such company is forbidden. The city has the right to purchase at the expiration of the 20 years, though it is not obligated to do so. What the status of the company would be, should the city decide not to purchase is not stated.

2. The "Regulatory" ordinance.

a. Gas inspector.

The regulatory ordinance first provides for a city gas inspector to be appointed by the City Council. In order to qualify for appointment he must be a man competent to test gas meters and gas - as to quality, purity, pressure, candle power, and heating value. This competence is to be determined by a committee composed

of the heads of the physics and chemistry departments of the University of Minnesota and the principal of the Central High School building. Examinations are to be given every other year in December beginning in 1910. Only from men who pass this examination or from those who have held office before, may the council select the Inspector. In addition there may be several deputies, and today there are about a half dozen people working under the inspector.

b. Maps.

The company is required to keep on record with the inspector a detailed map of all mains and connections. One series, on a scale of 100 feet to the inch must show the size and location of all the mains in the system and all services and house connections. The other is to be a general map - 400 feet to the inch, of the entire system showing all mains, district governors, booster or high pressure mains, but not the house connections or services, or details of intersections. These maps are to be kept always up to date.

c. Extension.

Extensions are to be made at the request of the city council, with certain qualifications, that where such directions are made the streets must be graded, or not more than six inches off from the established grades and that there must be at least one guaranteed customer to every 133 feet - or an estimated yearly sale of 20% of the total cose of the extension. Anyone on a street with gas mains must be connected upon his request. All mains must be cast iron and at least six inches in diameter, though wrought iron is allowed for connection. Where any paving or repaving is done the company must replace any mains of less than six inches in diameter, with cast iron mains of that size as a minimum. Any necessary changes in the location of the mains must be made at the company's expense. Any accidents or damages from excavations shall be indemnified by the company.

d. Meter testing.

A thorough system of meter testing is established and described in considerable detail. Any consumer is

entitled to have his meter inspected, upon payment of one dollar. If the meter is defective the dollar is returned to the complainant, who will also receive a proportionate refund if the over registering has exceeded 2%. All meters at any time found defective must be tested at least once every 3 years, though others may be continued in use until complaint is made.

e. Quality of gas.

Testing of gas is also provided for and two testing stations are used in addition to the one in the city hall. Not more than 4 grains of ammonia are allowed for every 100 cubic feet, nor more than 20 grains of sulphur from April to October and 30 grains from October to April. The gas must be wholly free from sulphuretted hydrogen. The candle power required is 18 and heating value must show a general monthly average of 600 B. T. U. and a minimum daily average of 550. Pressure must never be less than two inches nor more than four in any of the mains, except where higher pressure may result from elevation of the mains above the level of the water in the gas works holder. A detailed

schedule of penalties is enumerated for every manner of violation of the ordinance. One of the most important is the provision that if the average heating value should fall below 600 B. T. U. the consumers shall be entitled to a proportionate discount in prices.

Thus Minneapolis has secured a position which gives it complete control over the gas situation, subject only to court review on the subject of reasonableness.

D. Controversy of 1913-1914.

1. Council fixes rate of $.70

The first opportunity the city had to revise gas rates came in 1913. It was felt that the existing rate of $.85, while fairly low, still afforded the company excessive profits, and many of the aldermen in 1913 announced themselves in favor of cheaper gas. Professor W. D. Marks, who had served the city in 1910 was retained by the council to value the property of the gas company and submit to the council an estimate of what he felt would be a fair rate. After several months investigation he found the "capital investment" of the company to be $4,318,178.93 and that a price of $.678 a thousand cubic feet would afford a return of 6%. The gas company, anticipating the council's move, had secured W. A. Baehr, a prominent gas expert, to make a valuation for the company. He worked for more than a year, and his results were radically different from those produced by Professor Marks.[a] He claimed that the "capital investment" amounted to $9,990,867

a. This whole topic is based on the newspaper reports of the times, the paper book and briefs in the case of the Minneapolis Gas Light Co. vs. Minneapolis, and the case itself - 143 N. W. 728 - 1913.

and that to return a fair rate of income the price should be set at $.96 a thousand cubic feet. Conferences between the municipal authorities and the company failed to settle the difference, and so on July 25, 1913, the council passed the Hooker ordinance, which set the price of gas, from Sept. 1, 1913, at $.70 a thousand cubic to all private consumers.

2. Company attempts to secure Injunction.

The franchise, as amended in 1910, specifically provided that whenever the council should fix rates, the company must comply with them, and put the rates in force at once, subject to the right of court review on the reasonableness of the rate established. In spite of this clear provision, the company immediately made a motion for a temporary injunction to restrain the publication of the franchise, till its reasonableness had been passed upon by the courts. It secured a temporary restraining order, till the motion for an injunction could be heard and argued. The argument was made before Judge Molyneaux in the District Court of Henne-

pin County. He sustained the city's position and denied the injunction but issued a supplemental restraining order till October 3, when the case would go to the Supreme Court. This order was continued for three weeks by the Supreme Court, till its decision should be rendered. On October 24, the motion for injunction was finally denied and the city authorized to publish the ordinance.[a]

Neither of these decisions were concerned with the reasonableness of the rate. They merely determined the point, that the company must abide by the franchise of 1910 and put whatever rates the council should pass, into immediate effect, the reasonableness to be tested afterwards.

Just why the company should have attempted to fly in the face of plain and direct language and to secure legal sanction for a violation of the franchise is not quite clear. At all events, following the decision of the Supreme Court, the ordinance was published and the 70 cent rate went into effect November 8.[b]

a. Minneapolis Gas Light Co., vs. the City of Minneapolis, 143 N. W. 728.

b. Until the ordinance was published it did not become of any effect. Hence the company's motion to restrain its publication.

The company asked that the people continue to pay the $.85 rate till the case was decided. It filed a bond agreeing to refund any charges in excess the amount finally decided upon by the courts. The city attorney opposed this offer, and advised everyone to pay only the 70 cent rate. But in spite of this, many people accepted the company's offer and continued to pay the old rate.[a]

3. Difference in valuations.

The gas people, after this decision, instituted action to review and correct the rate established by the city. Date for the trial was set for February 1, 1914. The difference between the city's and the company's valuation was exceptionally great, the Marks estimate being less than half the Baehr valuation, and also nearly $2,000,000 less than the company's bonded indebtedness. It was this latter fact which made the city's rate appear so unreasonable to the company, and it is probable that many people felt that it would be hardly fair to jeopardize the company's bonds.

a. It was estimated by the company in April 1914,- after the rate question,had been settled that there would be about 60,000 refunds to be paid, amounting to $35,000. The large number is no doubt caused by the fact the refunds for each month are figured separately.

The difference between the two estimates is indicated by the following table:-

ITEM.	Baehr's Estimate	Mark's Estimate	Excess of Baehr over Marks
Real Estate	552,779	226,944.00	325,835.00
Buildings	490,043	275,510.65	214,532.35
Equipment as follows:			
Baehr:			
Apparatus 1,310,482:			
Piping etc 181,865:	1,492,347		
Marks:			
CONTENTS 470,760.92:			
Yd. Conn 31,919.18:			
10 % [b] 50,268.01:			
Holders 629,026.00:		1,181,974.11	310,372.89
Baehr:			
Mains 2,089,964:			
Street lamps etc. 905,395:	2,995,359		
Mark's:			
Street main and lamp posts:			
1,646,689.90:			
Serv. 377,334.00:		2,024,023.90	971,335.00
Meters in use	550,854	338,943.27	227,761.73
" " stock	15,851		
Stable and Garage equipment & tools	21,436	20,783	653.00
Office equipment	55,923	none	55,923.00
Working Capital	500,000	250,000	250,000.00
Depreciative reserve fund	346,275	none	346,275.00
Going Value	2,250,000	None	2,250,000.00
	[a] 9,270,867	4,318,688.93	4,952,688.07

a The total submitted by the company is $9,990,867. Either their items are incorrect or their addition is faulty.

b. On two preceding items.

These valuations are based upon the "cost of reproduction" theory. On every item the company's expert placed a higher estimate than the city's expert. While their valuations show why the company fought so bitterly the action of the council, they also emphasized the unscientific basis of the whole "cost of reproduction" theory. The whole matter, as Professor Gray pointed out as the last meeting of the American Economic Association, is a matter of guess work. What one's particular guess happens to be, it appears from the Minneapolis case, depends upon the source of his income.

4. Death of Professor Marks and resulting complications.

Preparations were moving nicely ahead towards the trial when Professor Marks died very suddenly on January 8. This completely upset all calculations. The city had to look for new experts, and this time Professor E. W. Bemis, and Mr. Charles F. Pillsbury were secured to recheck the city's valuation. Trial was postponed till April 6. As the date for the trial grew

near, it became apparent to the new experts, that Mr. Mark's valuation had been too low. Moreover the price of oil had arisen, also, since the year before and the increased cost of enriching the gas, had consequently somewhat increased the total cost of production. From these facts it looked to the experts and to the city attorney that the 70 cent rate could not well be sustained. The city had already spent nearly $16,000 for Professor Marks and probably will spend about $10,000 to Professor Marks and Mr. Pillsbury. It was found out that the trial would last for several months, and at $75.00 a day to Mr. Bemis, and $50.00 a day to Mr. Pillsbury the expense threatened to grow very large. This was a fact of much importance to the city, especially when it was unlikely that the rate, established by the council, would be sustained. Another influencing cause was undoubtedly the respect which people had for the bond issues of company. Legally the securities had no standing in court, and in the settlement finally reached, they were not mentioned.

Yet it is just ordinary common sense to believe that any court would hesitate long before it would sustain a rate which threatened bankruptcy, as did the 70 cent rate here in Minneapolis.

5. The Final Settlement.

At any event, the experts advised compromise. The company was willing to negotiate. Every month of delay meant the continuance of the 70 cent rate which was in force, and a curtailment of the gross income. So the attorneys of the two contestants finally agreed on a schedule of rates, and an order signed on April 8, by Judge W. C. Leary fixed the price of gas for five years, beginning with November, 1913. The rates are as follows:

First 5 months $.70 - Last 34 months $.77

Next 21 " .80 - Average for 5 years $.774

This settlement also involved a reduction of the candle power from 18 to 15.

The decision was met with strong approval in some quarters, and even stronger disapproval in others

William Hooker, the father of the 70 cent ordinance was very well pleased with the outcome. The newspapers seemed to regard the bargain as a good one. The statement issued by City Attorney Daniel Fish as follows:[a] .

a. Minneapolis Journal, April 8, 1914.

"This settlement, reached within a week after the company opened the first door to negotiation, should quiet the apprehensions of some of our people that the city authorities have meant to be unjust. The situation has changed materially since last July. One circumstance is the progressive rise in the price of oil, due to increased demand. Large quantities of oil are used in the making of water gas. To meet this condition more coal gas must be made, necessitating large expenditures upon the company's plant. In the trial which was about to begin, besides the burdensome expense involved, the city would have been sorely handicapped by the death of Prof. Marks and by the very short time allowed to us by the court for repairing that loss. The whole field was thoroughly canvassed, with the efficient aid of Messrs. Pillsbury and Bemis. The result was that this settlement, arrived at through mutual concessions, was deemed advisable. My hope is that the period of quarrel will be succeeded by an era of comity and co-operation, beneficial to all concerned."

On the other hand many members in the council were openly dissatisfied with the result. Much hostility to any compromise was displayed, and by a close vote the settlement was disapproved by the aldermen. When it was found that the court order was final and conclusive, and that the city could not regulate rates again until 1915, an ordinance was introduced, for the purpose of taking a popular vote on the question of public purchase. If the ordinance is passed the people of Minneapolis will vote November 3, 1914 to determine whether or not they shall purchase under eminent domain proceeding, the property of the gas company, and undertake municipal ownership. The gas people feel safe, however, in this quarter. What the outcome will be, is uncertain. But in the meantime, the people of Minneapolis have secured a substantial reduction in price, have obtained full publicity of financial affairs, have made a detailed valuation of the gas works, have aroused great public interest over the public utility situation, and have demonstrated that a city can enforce an effective regime of municipal regulation. It would appear that very little more could be asked.

Chapter VI Conclusion

A. Difficulties in Minnesota.

1. Inharmonious relations between municipalities and the public utilities.

Very little need be added in this final chapter. In each of the preceding discussions certain conclusions have been drawn so that but little remains to be summarized. The three greater difficulties in Minnesota have been: 1. That the companies have not observed the "public servant" idea. 2. That the public has not known enough, and in some cases has not been interested enough in the public utilities, and 3. That as a result, the relations between the two have either been apathetic or unfortunately unharmonious.

It is noticeable that many public utility men do not "get on" well with their communities. Prior to municipalization in Duluth in 1898 the city and the company were engaged in controversy for several years. In Mankato we have seen that the public suspects the Consumers Power Co, and the company with no less reason, mistrusts the fairness of the city council. The

attitude of the companies in St. Paul and Minneapolis is about the same as in Mankato. It is felt, with probable truth, that the efforts in both these cities, has been based to a considerable extent on selfich political motives of certain aldermen. On the other hand the people of both cities are quick to tell of unfair practices of the companies, and of the unwillingness of the corporations to submit to any form of regulation. At any rate there has been continued wrangling for several years.

Such a condition as this, it is obvious, is not conducive to the healthful development of the proper interests of either the public utility or the municipality. Each fears and suspects the action and motives of the other. Both are probably to blame in part. One principal way out of the difficulty will be found through the path of publicity. If proper reports are made of the business done, and if systematic compilations and analyses of these reports are published so that the public understands the methods and practices of its

utilities, public opinion will become more intelligent and saner than it has been heretofore. As long as the utilities have insisted on acting in the dark, they are to be blamed if the public formulated unjust opinions of them. Let public opinion be properly adjusted, and in all likelihood it will be fair. It will not approve political manouvering such as is occurring in Mankato. When such a condition arrives, the companies of course will be better off and more disposed to act peaceably and agreeably toward the municipalities they are serving.

3. State Vs Local control.

In the state of Minnesota there has been, and still is waged a bitter controversy over the problem of the proper unit of control. Governor A. O. Eberhart, following the general movement toward state commission control advocated such a policy for Minnesota. This plan was opposed by many people who suspected his motives, by others who are honestly opposed to having the state rather than the municipality in control, by some who

fear it would block the present marked trend toward municipal ownership in Minnesota, and finally by some who sought political capital out of it. The whole struggle has been most unfortunate, because of the political turn it has taken. Neither its advocates nor its opponents have considered it with the proper care and precision which is needed. It has become a political issue, tied up with the liquor and primary nomination question. Such entanglements are not conducive to intelligent legislation.

Out of the controversy however it is quite probable that some improvement in affairs will be made. It is now pretty generally recognized that a state law should be passed to provide for uniform accounting and reporting methods. This work should be carried on by a state board, which is to serve as a general clearing house for information and publicity concerning any and all public utility problems. It is very likely that the legislature will not consent to having the city council deprived of its rate making power. In the large cities there is especially strong objection to

this, particularly since these cities have so recently been able to exercise that power. It has been on this point that the controversy has waged for the most part. The Home Rule League and the anti-administration forces have insisted that the cities should retain the right to control rates and services.

It is not the writer's purpose to go into any detailed consideration of this controversy. This much may be said, however. Duluth has no particular problem of gas regulation, because of municipal ownership. Minneapolis has settled its gas rate problem for the next five years, in a satisfactory manner. St. Paul soon will have settled its controversy. The Mankato situation will probably be cleared up in another year or so. As far as the other cities are concerned,(and those named,too, for that matter) if the legislature creates an information bureau with the power to prescribe accounts, require reports and maintain a proper degree of publicity, most of the rate problems will disappear. Thus it is the writer's opinion that state

provisions (as distinct from municipal) for rate regulation are not of prime necessity.[a]

a. These remarks apply only to gas companies. With the telephone business, one interwoven net work over the entire state, there are entirely different problems. To a somewhat lesser degree the electric industry with its long transmission lines and inter-city business, is also on a different basis from the gas business. With but two small exceptions (Northfield and Moorhead) the gas is manufactured where it is sold.

B. Regulation of Security Issues.

1. Effect from Investor's Standpoint.

The matter of regulating stocks and bonds, is another one upon which there is much disagreement. Conditions in Minnesota, which we have just outlined, have been such as to justify in our opinion, the conclusion that regulation of security issues would be desirable. Before elaborating this conclusion, however, let us consider the general problems involved, and view them afterwards in the light of Minnesota experience.

a. Strengthens the Security.

Regulation of security issues is attempted for the purpose of preventing over-capitalization, and keeping the capital issues of a utility approximately equal to its fair value. It is exercised by compelling the corporations to secure permission from some state authority, generally a commission, to issue the securities in question. The commission is supposed to ascertain that the sale is to be bona fide one and[a]

a. For detailed state laws relating to this subject see Commission Regulation of Public libilities. Ch. XII Stock and Bond Issues. pp 849 - 906.

and that it will not result in "watering". This process may be regarded as a means of protecting the investor, and it may be also looked upon as a means of protecting the consumer. As it has been exercised by the state commissions of Massachusetts, New York, and Wisconsin, this power has made public utility securities a much safer form of investment than they were formerly, or in some cases has removed them from the field of speculation to the field of investment.[a] Where bonds are issued up to the full estimated valuation of a public utility as a going concern, and then capital stock issued to an equal amount, it is clear that the stock at first, at least, is worthless, and that the bonds with so little margin of safety, are not by any means the best form of security possible. The investment effect of requiring public permission for security issues is well stated by Mr. Halford Erickson, chairman of the Wisconsin Railroad Commission.[b] " That strict governmental regulation of security issues will increase the safety and popularity of such issues from a purely

a. The writer here uses the word investment meaning the purchase of securities for the sake of income to be secured from them; and speculation, as the purchase of securities with the intention of selling them at an advanced price and securing the profit from a rise in market prices. Both are relative terms.

b. Government Regulation of Security Issues-in Regulation of Public Utilities-Three discussions, by Halford
(cont. on next page.)

investment point, is undoubtedly a fact. This is especially true where under similar regulation the utilities are practically assured of rates that, under ordinary conditions, will yield reasonable returns on a fair valuation of the plant and its business. There can be no getting away from the fact that securities, the par value of which only equals the investment, must be safer and more promising investment propositions than securities, the par value of which greatly exceeds the investment. This is certainly the case if the other conditions in both cases are about the same. The relation which the par value of the securities outstanding bears to the amount invested is always an important element in determining the value of the former. That this is the case is almost too obvious for explanation; for it is plain that the value per share must be greater where an investment of say $100,000 is represented by this amount of securities than would be the case if the securities amounted to twice as much as the investment.

b. (con't..from preceeding page) Erickson (1911) pp 42-66. This paper of Mr. Erickson's, read in Madison in January 1909, contains a most excellent and illuminating account of the general problems of security regulation, explaining both its strength and its weakness.

"Except perhaps for certain speculative purposes, the better secured the bonds and stocks happen to be, the more attractive they also are to investors."

b. Protects the small Investor.

This is especially true in the case of the small investor. When a security can be issued with the statement that it has been approved by a public service commission, the uninitiated will feel safe in purchasing what would otherwise be largely a gamble. For some time it was claimed that such regulation would restrict and hinder investment, and make financing difficult. Thus in 1908 the public utility interests in Massachusetts attempted to revise the laws of that state which gave the railroad commission and the board of Gas & Electric Commissioners large powers of control over security issues, and to curtail the powers of these administrative boards. Their claim was that the laws discouraged the investment of capital and retarded public utility develop-

ment in Massachusetts. This claim was disputed seriouly by the advocates of the law,[a] and the argument they presented seemed conclusive. It cannot be denied that stringent laws of such nature will prevent wild and reckless speculation. That is one of the purposes of the law. But it is hard to see how it would restrict legitimate investment. The recent security issue of the Third Avenue R. R. in New York, where the sale was made directly to investors without the aid of the underwriters, and under the approval of the First District Commission of New York, is a case in point. Here $4,000,000 of bonds were sold to the general public; the highest bidders received the securities, which were e easily sold, and the underwriting commissions were eliminated.[b] In fact one class of people who oppose security regulation base their objections on the grounds that such control is of too much benefit to the investors and public utilities. The Minnesota Home Rule league criticizing the work of the Wisconsin Railroad commission claims that "the most notable results in Wisconsin of the

a. Argument of Joseph B. Eastman in behalf of the Public Franchise League. April 30, 1908 before the committee on Railroads and Taxation.
b. New York Times Annalist. March 2, 1914.

exercise of this function is the additional stability which has been given public utility securities, with logically accompanying higher values."[a]

Protecting the small investor, and standardizing and rendering stable public utility securities, cannot logically be regarded as objectionable features of security regulation. On the other hand, they appear to be desirable and necessary. The very stability and standardization of securities will justify the state's insisting upon lower rates of return than has been prevalent in some companies. With securities changed from a speculative to an investment basis a new class of purchasers will be invited into the field, properly satisfied with a lower, and more certain rate of return. This certainly will prevent the driving out of capital, which might otherwise occur.

2. Regulating Securities from the Consumer's Standpoint.

This leads us to consider the proposition of regulating securities for the benefits of the consumer. On this point there is much conflict of opinion. The

a. Pamphlet issued March 1914, by the Minnesota Home Rule League, Written by Stiles P. Jones, on Regulation of Public Utilities in Wisconsin, pp.40-41.

The railroads particularly claim that capitalization has no effects whatever on rates charged to the public, and that as a result, regulation of securities to prevent watered stock is entirely unnecessary.[a] This was the view taken by the Railroad Securities Commission appointed by President Taft to consider the problem. This commission, moreover, was composed of well recognized authorities, whose word consequently carries much force with it.[b] Likewise, Professor E. W. Bemis, a well known expert, working generally for municipalities, claims that excessive rates are the cause, not the result of over capitalization, and that if rates are adequately regulated, securities will take care of themselves.

a. Watered stock as a temptation to excessive prices.

On the other hand Theodore Roosevelt, while President of the United States, said, May 30, 1907.

Over capitalization often means an inflation that invites business panic; it always conceals the true relations of profits earned, to the capital in-

a. See letter of W. H. Williams, Third Vice President of the Del. and Hudson R. R. Co., to the Federal Railroad Securities Commission, Jan. 18, 1911, (published in pamphlet form)-especially pp 43-54. Also an address by Francis Lynde Stetson, a prominent railroad attorney and officer, before the Economic Club of New York, June 5, 1907, on Overcapitalization of the Railroads. Also p. 7 of the Report of the Railroad Securities Commission to President Taft, Dec. 11, 1911, (House Document No. 256)

b. The commission consisted of A. T. Hadley, F. N. Judson, Frederick Strauss, W. L. Fisher and B. H. Meyer.

vested, creating a burden of interest payments which may redound to the loss alike of the wage earner, and the general public, which is concerned in the rates paid by shippers." Colonel Roosevelt was speaking primarily of railroads, but the statement could be applied to other public utilities. If a corporation succeeds in issuing several hundred thousand dollars worth of stock, it is the instinctive desire of the management to make them worth something, There is only one way of doing this, and that is to pay dividends. This must be a strong temptation, and the more so since the holders of such securities will be naturally desirous of making a profit on them.

The Supreme Court of the United States has declared that capitalization should be considered in the making of rates. It has also declared that many other factors should be borne in mind, without assigning any definite proportion to any particular one. Capitalization has been regarded as legally one of the least important factors. Yet it is the writer's opinion that once a security issue has been made, and

widely distributed among "innocent investors," these securities will be protected by the courts in any rate cases. Even when they are not legally protected, it might be comparatively easy, as we have seen, to make the securities good through bookkeeping devices which charged items of capital to operating expense, and thus increased, unknown to the public, the physical value of the property. Just as long as stock watering is permitted, it is the writer's belief, based on the financial experience of companies in Minnesota that the companies will take advantage of this privilege to inflate their security issues and hide their true earning capacity under this deceptive cloak.

b. Dangers of Security Regulation.

The chief objection to security regulation consists in the claim that stocks and bonds passed upon by a commission will thereby secure a legal standing and thus obligate the public to pay returns upon them. The decision in the Consolidated Gas Case, [a] by the Supreme Court of the United States is used to support this argument. In that case the company had

a. 212 U. S. 19

been consolidated under the authority of a New York law which permitted the capitalization of the "fair aggregate value of the property, franchises and rights." The company assigned $7,881,000 of its capital to franchise value, and the Supreme Court declared that the company must be permitted to receive an income on this amount as well as on the tangible property.[a] The reason for so holding was that the legislature had authorized such an issue of stocks and that in consequence they were given legal recognition. It is felt that under this decision, if commission or councils or any administrative bodies pass upon security issues, such issues will thus receive a legal standing and be entitled to a fair return, no matter whether the property depreciates and becomes worth only a fraction of the capitalization thus issued. It is said that Mr. John H. Roemer of the Wisconsin Commission, Professor John R. Commons, Professor B. H. Meyer of the Interstate Commerce Commission and others friendly to most principles of state control have come to oppose security regulation for the above named reason.[b]

a. See Whitten: Valuation of Public Utilities, Sections 682 - 687.
b. See the Minnesota Home Rule Leagues' Pamphlet on Commission Regulation of Public Utilities, p 41.

The states of Arizona and California have attempted to avoid such a possibility, by enacting a law to the effect that nothing done by their commissions, (in passing on security issues) shall be construed to obligate the state to pay or guarantee any stocks or bonds or other evidences of indebitedness.[a] Likewise some of the public utilities commissions, particularly that of the Second District in New York, specifically state in their decisions relating to capitalization, that their authorization of securities shall in no sense guarantee the payment of dividends upon these securities.[b]

The objection to such a situation is based on several factors. In the first place, if new issues are guaranteed or validated, they are likely to validate existing inflated ones. Such a condition is obviously opposed to the interests of the public. In the second place it is feared that unintelligent boards may authorize issues which ought not to be approved. That there is much truth in this is evidenced by the fact that public utilities and the outstanding capitalization are growing at a tremenduous rate. Many commissions

a. Commission Regulation of Public Utilities Ch. 12, Section C. p851.
b. See particularly the remarks of Howard C. Hopson, in the Proceedings of the American Economic Ass'n 1913 p. 65.

have been so seriously burdened that they have been unable to devote proper attention to the consideration of this vast volume of securities which has been thrust upon them. There is always the danger that the corporations may bring improper pressure to bear upon commissions to secure authority for issuing watered stock, and thus defeat the very object of the law. And finally there is the possibility that the property may depreciate in the future and the business diminish materially, while such authorized securities would be entitled to a full return.

c. The necessity of changing from our present system.

However, it appears to the writer that there must be a change from our present system of basing rates on valuation, to a plan which will place more emphasis on actual investment. If anything has been a dissapointment and a failure it has been the system of basing rates on valuations made according to the "cost-of-reproduction theory. Requiring that rates be paid

on such a valuation calls for the payment of profits on vast amounts of unearned increment of land; of paving and other works performed by the city, after the utilities have been installed; of interest during construction; of brokerage fees and various other commissions and of great costs of developing the business - many or all of which may not represent a cent of actual expenditure or investment. As Mr. Clyde B. Aitchison has well said, "If the term 'physical value' has any meaning at all, and represents a concept of value as equal to the cost of reproduction of the property less its depreciation, then we say that the idea is economically impossible, is legally unsound, and practically is fraught with the gravest danger to the country as a whole. It involves the capitalization of the tremenduous unearned increment in land values aggregating billions of dollars in excess of any actual investment and the allowance of enormous sums for overhead expenses which never were incurred, and for contingencies which never have happened.[a]"

It is impossible in this paper to develop this

a. Address before the Oregon State Bar Ass'n, Nov. 19, 1913.

point. Rather is it accepted wbthout extensive proof.[a] that the"cost of reproduction"theory should be discarded as a basis for rate making, and in its place substituted the actual historical investment. By so doing, most of the complicated, theoretical problems of valuation would be eliminated, and rate making would be placed on a much more simple basis. But if we utilize original investment as a basis, why not have it represented by the capital issues outstanding? When a company is inaugurated, see to it that the proceeds from securities are used in legitimate purposes of establishing the business, and then permit dividends upon this amount. If the securities have been sold at a discount, require that this amount be amortized, so that it will not be an unfair burden on the consumers. Supervise accounts and maintain proper depreciation provisions, in order that the property shall at least be equal the par value of all securities. Permit, if necessary, that improvements be made out of earnings, but prohibit the capitalization of such improvements or any surplus. Allow the companies to make fair dividends, more that 6% or 5% or

a. For more complete discussion, see: Brooks Adams, Railways as Public Agents, and John H. Gray: Vagaries of of Valuations, both quoted in Chapter I. Also H. P. Gillette in Railroad Gazette, January 10, 1913 and Max Thelan, Ass'n of Railroad Commissioners, October, 1913, quoted in Professor Gray's paper.

8%, the amounts now commonly permitted on valuations. But always see to it that the return, no matter what it may be, is a return to the security holder for money actually invested by him in the public utility for the purpose of supplying a particular service.

Such a plan as this could look more to security and profit regulation than price regulation, assurred that excessive prices would be out of the question, because the investment would be known and profits limited by law or public opinion. Such a plan would be much like the English system of regulating profits rather than rates, a system which apparently has worked with great success. According to Dr. Robert H. Whitten, profits to security holders in England range from 7% to 17%, which is certainly fair; prices for gas are considerably lower than in the United States, and as a result the relations between the public and the utilities owners are harmonious[a] and satisfactory. The possibility of securing such a situation is well worth the trial.

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